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TYPHUS FEVER

THE MULTIPLICATION OF THE VIRUS OF ENDEMIC TYPHUS IN THE RAT FLEA *Xenopsylla cheopis*

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In previous studies we have shown that—the virus of endemic typhus is present in rat fleas taken from wild rats caught at typhus foci; the rat flea *Xenopsylla cheopis* readily becomes infected with the virus of endemic typhus when allowed to feed on typhus infected rats; infected fleas readily transmit typhus from rat to rat; the virus of typhus is present in the feces of infected fleas; typhus may be transmitted by rubbing macerated infected fleas or the feces of infected fleas into the abraded skin of guinea pigs; and that infected fleas may retain the infection for 52 days. In repeated attempts we have failed to transmit typhus by the bite of infected fleas when the feces are not allowed to come in contact with the skin of the experimental animals and we have not secured any evidence to indicate that the virus of typhus may be transmitted to the offspring of infected fleas through the egg.

If the foregoing evidence is coupled with the epidemiological evidence which shows that endemic typhus is not louse-borne, that it is associated with contact with rats, and that it has its greatest prevalence in the late summer and fall, there can be little doubt that the rat flea *X. cheopis* is the important vector of endemic typhus of the United States.

The evidence gathered to date indicates that rat fleas acquire typhus virus from rats in nature and that the virus multiplies in them.

Mooser and Castaneda have noted the absence of rickettsia in normal fleas and their presence in fleas subsequent to feeding on typhus (Mexican) infected rats, indicating to them that "an extraordinary multiplication of the virus" had taken place in the fleas.

The following experiment was designed to determine whether a multiplication of typhus virus takes place in fleas infected with endemic typhus virus or whether the flea only hoards the virus and is in reality merely a mechanical vector.

Approximately 100 young *X. cheopis* hatched from eggs of typhus-infected fleas were placed in box X 9. Eighteen of these fleas were

collected and emulsified in salt solution, and the emulsion was injected intraperitoneally into four guinea pigs. On the succeeding day 27 fleas were collected from box X 9 and, after emulsification, injected into a second group of four guinea pigs. None of the guinea pigs injected with either group of fleas developed signs of typhus.

Approximately two months later two or three hundred fleas were removed from box X 9 and placed in fresh box X 17. Three white rats in the seventh day after their intraperitoneal inoculation with endemic typhus virus (testicular washings) were then placed in box X 17 for 24 hours. These rats were then killed and placed in fresh box X 17A. As only the fleas that were on the rats at the time when the rats were killed were placed in box X 17A, it was presumed that they had all had equal chance of becoming infected. Sixteen of these fleas were then emulsified in salt solution and this entire emulsion was used in inoculating four guinea pigs intraperitoneally. A fresh rat was then placed in box X 17A to attract the fleas from the dead rats and to furnish food for these fleas. On the following day this fresh rat was killed, 16 fleas were removed and inoculated into 4 guinea pigs, and a fresh rat was placed in box X 17A. This procedure was carried out on each of eight days. The results of this test are shown in Table 1.

TABLE 1.—Results of inoculations of fleas into guinea pigs at daily intervals after the fleas had fed on typhus-infected rats for 24 hours

Reference Nos.	Days after infective feeding of fleas	Incubation period in the guinea pig, in days ¹	Result
<i>Guinea pigs inoculated with four fleas each</i>			
1	1	7	Typhus. ²
2	1		Negative. ³
3	1	10	Typhus.
4	1		Died.
5	2		Negative. ³
6	2	5	Typhus.
7	2	8	Do.
8	2	9	Do.
9	3	8	Do.
10	3		Died.
11	3	7	Typhus.
12	3		Died.
13	4	7	Typhus.
14	4	7	Do.
15	4	7	Do.
16	4	5	Do.
17	5	7	Do.
18	5	7	Do.
19	5	9	Do.
20	5	7	Do.
21	6	4	Do.
22	6	2	Do.
23	6	2	Do.
24	6	4	Do.
25	7	4	Do.
26	7	5	Do.
27	7	4	Do.
28	7	5	Do.
29	8	4	Do.
30	8		Died.
31	8	2	Typhus.
32	8	4	Do.

¹ The number of whole days of normal temperature succeeding the day of inoculation was considered the incubation period.

² The diagnosis of typhus was based on the occurrence of typical febrile and scrotal reactions.

³ Subsequently tested for immunity to guinea pig passage virus (endemic typhus) and found immune.

The results shown in Table 1 indicate that for the purpose of the experiment too many fleas were used in the inoculations. The shortening of the incubation period noted in the guinea pigs, as the time lengthens between the infecting feeding of the fleas and their emulsification, is somewhat suggestive of a multiplication of virus in the flea, but the possibility of a simple hoarding of the virus can not be ruled out.

To secure data on the number of fleas or fractions of a flea which might be expected to contain sufficient virus to infect a guinea pig a preliminary titration was next made, using a group of known infected fleas without regard to the length of time they had been infected. It was found in this titration that an amount of emulsion containing one-fiftieth of a flea was sufficient to cause in a guinea pig the typical febrile reaction and scrotal involvement of endemic typhus.

Fleas from box X 18A were then chosen for a repetition of the experiment to determine the multiplication of typhus virus in fleas.

Box X 18A had originally contained infected fleas. All fleas were carefully removed from this box by introducing white rats into the box to collect the fleas and then removing the rats. The box was then left without a rat for two weeks, at the end of which time a fresh white rat was placed in the box to furnish food for newly developed fleas. Five days after the rat had been introduced into this box a few fleas were noted, and a few days later they were present in great numbers. Five fleas were then removed from box X 18A and emulsified in saline, and half of the emulsion was injected intraperitoneally into each of 2 guinea pigs. One month later 5 fleas were again taken from box X 18A and injected into 2 guinea pigs. This was repeated 2 weeks later, and at the end of another period of 2 weeks 25 fleas from the same box were emulsified and injected into 2 guinea pigs. None of the guinea pigs inoculated with fleas from this box showed any signs of typhus. One guinea pig from each pair of those injected with fleas from box X 18A was later tested for immunity to endemic typhus virus and found nonimmune.

From our failure to recover typhus virus from fleas in box X 18A after these repeated trials it was concluded that none of the fleas in this box were infected. Three white rats (5579, 5633, and 5653) were then inoculated with endemic typhus virus (testicular washings) on the 17th, 19th, and 20th of the month, respectively. On the 24th the normal rat in box X 18A was killed and a few dozen fleas were removed to a fresh box to renew our colony of noninfected fleas. Box X 18A was left without a rat until the morning of the 26th. The three white rats (5579, 5633, and 5653) previously inoculated with endemic typhus were then placed in box X 18A and allowed to remain for 24 hours. At the end of this time the three rats were removed to a fresh box (X 18E) and killed. It was presumed that all

the fleas then on the rats had fed at some time during the preceding 24 hours. Twelve fleas were then removed. Four of these fleas were smeared and stained with Giemsa. The remaining eight fleas were emulsified in 4 c c of physiological saline. From this emulsion three dilutions were made. One c c of the original emulsion and 1 c c of each of the dilutions were then inoculated intraperitoneally into two guinea pigs. This same titration was carried out on each of the following nine days, using fleas freshly collected on each day from box X 18E. On the eleventh day four additional dilutions were made and also inoculated into guinea pigs. To furnish food for the infected fleas in box X 18E and to furnish an easy means of catching fleas, a fresh rat was placed in the box each afternoon and killed the following morning. In the guinea pig inoculations made on the first 10 days of the experiment the following number of fleas or fractions of a flea were injected into the guinea pigs, 2 fleas, $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{32}$ of a flea. On the eleventh day, in addition to the above, guinea pigs were also inoculated with $\frac{1}{128}$, $\frac{1}{500}$, $\frac{1}{2000}$, and $\frac{1}{8000}$ of a flea. Nine days later, being 20 days from the time that the fleas had been fed on the typhus-infected rats, the above amounts and also smaller fractions of a flea were inoculated into guinea pigs. The smaller fractions given on this day were $\frac{1}{8000}$, $\frac{1}{20000}$, and $\frac{1}{40000}$ of a flea. Forty days from the time that the fleas had fed on the typhus-infected rats there were only four fleas left. These were emulsified in salt solution, titrated in various dilutions and inoculated into guinea pigs. In this titration the same fractions of a flea were injected as in the titration made 20 days earlier, with the exception that the dilution containing $\frac{1}{8000}$ flea per c c was discarded and an additional dilution containing $\frac{1}{20000}$ flea per c c was added.

The results of these titrations are shown in Table 2. In this table, as in Table 1, the diagnosis of typhus was based on the occurrence of a typical febrile reaction and typical involvement of the genitalia. With two exceptions, all the guinea pigs were males of about 500 grams each.

TABLE 2.—Results of inoculations of fleas into guinea pigs at stated intervals after the fleas had fed on typhus-infected rats for 24 hours

Reference Nos.	Days after infective feeding of fleas	Incubation period in the guinea pig, in days ¹	Result
<i>Guinea pigs inoculated with 2 fleas each</i>			
32	1		Died.
33	1	9	Typhus. ¹
34	2	8	Do.
35	2		Died.
36	3	11	Typhus.
37	3	7	Do.
38	4	4	Do.
39	4	4	Do.
40	5	6	Do.
41	5	2	Do.
42	6	2	Do.
43	6	2	Do.
44	7	5	Do.
45	7	5	Do.
46	8	5	Do.
47	8	5	Do.
48	9	2	Do.
49	9	3	Do.
50	10	2	Do.
51	10	2	Do.
52	11	2	Do.
53	11	2	Do.
54	20	3	Do.
55	20	3	Do.
56	40	5	Do.
<i>Guinea pigs inoculated with 1/2 flea each</i>			
57	1		Negative. ¹
58	1	6	Typhus.
59	2		Negative. ¹
60	2		Do. ¹
61	3	13	Typhus.
62	3	8	Do.
63	4	4	Do.
64	4	4	Do.
65	5	6	Do.
66	5	6	Do.
67	6	5	Do.
68	6	4	Do.
69	7	3	Do.
70	7	4	Do.
71	8	4	Do.
72	8	3	Do.
73	9	4	Do.
74	9	4	Do.
75	10	5	Do.
76	10	4	Do.
77	11		Died.
78	11	2	Typhus.
79	20	3	Do.
80	20	3	Do.
81	40	5	Do.
82	40	8	Do.
<i>Guinea pigs inoculated with 1/8 flea each</i>			
83	1		Died.
84	1	2	Fever. ¹
85	2		Negative. ¹
86	2		Do. ¹
87	3	12	Typhus.
88	3		Died.
89	4	6	Typhus.
90	4	6	Do.
91	5	5	Do.
92	5	5	Do.
93	6	5	Do.
94	6	4	Do.
95	7	3	Do.
96	7	4	Do.
97	8	4	Do.
98	8	4	Do.
99	9	5	Do.
100	9	4	Do.
101	10	5	Do.

See footnotes at end of table.

TABLE 2.—Results of inoculations of fleas into guinea pigs at stated intervals after the fleas had fed on typhus-infected rats for 24 hours—Continued

Reference Nos.	Days after infective feeding of fleas	Incubation period in the guinea pig, in days ¹	Result
<i>Guinea pigs inoculated with 1/8 flea each—Continued</i>			
102.....	10	4	Typhus.
103.....	11	3	Do.
104.....	11	4	Do.
105.....	20	3	Do.
106.....	20	5	Do.
107.....	40	8	Do.
108.....	40	9	Do.
<i>Guinea pigs inoculated with 1/32 flea each</i>			
109.....	1	-----	Negative. ³
110.....	1	-----	Do. ³
111.....	2	-----	Died.
112.....	2	-----	Negative. ³
113.....	3	-----	Do. ³
114.....	3	-----	Do. ³
115.....	4	7	Typhus.
116.....	4	7	Do.
117.....	5	-----	Died.
118.....	5	6	Typhus.
119.....	6	3	Do.
120.....	6	5	Do.
121.....	7	5	Do.
122.....	7	4	Do.
123.....	8	-----	Died.
124.....	8	-----	Do.
125.....	9	5	Typhus.
126.....	9	5	Do.
127.....	10	5	Do.
128.....	10	4	Do.
129.....	11	5	Do.
130.....	11	5	Do.
131.....	20	3	Do.
132.....	20	5	Do.
133.....	40	5	Do.
134.....	40	11	Do.
<i>Guinea pigs inoculated with 1/128 flea</i>			
135.....	11	7	Do.
136.....	11	4	Do.
137.....	20	7	Do. ⁴
138.....	20	6	Do.
139.....	40	6	Do.
140.....	40	6	Do.
<i>Guinea pigs inoculated with 1/500 flea</i>			
141.....	11	5	Do.
142.....	11	10	Fever (female).
143.....	20	7	Typhus.
144.....	20	5	Do.
145.....	40	9	Do.
146.....	40	11	Do.
<i>Guinea pigs inoculated with 1/2000 flea</i>			
147.....	11	8	Do.
148.....	11	10	Do.
149.....	20	8	Fever only. ⁴
150.....	20	8	Typhus. ⁴
151.....	40	8	Do.
152.....	40	9	Do.
<i>Guinea pigs inoculated with 1/8000 flea</i>			
153.....	11	5	Do. ³
154.....	11	7	Do. ³
155.....	20	-----	Negative. ³
156.....	20	7	Typhus. ⁴
157.....	40	11	Fever only.
158.....	40	14	Typhus.
<i>Guinea pigs inoculated with 1/16000 flea</i>			
159.....	20	6	Do. ⁴
160.....	20	7	Do.

See footnotes at end of table.

TABLE 2.—Results of inoculations of fleas into guinea pigs at stated intervals after the fleas had fed on typhus-infected rats for 24 hours—Continued

Reference Nos.	Days after infective feeding of fleas	Incubation period in the guinea pig, in days ¹	Result
<i>Guinea pigs inoculated with 1/38000 flea</i>			
161.....	20	5	Typhus.
162.....	20	5	Do.
163.....	40	8	Do.
164.....	40	11	Do.
<i>Guinea pigs inoculated with 1/64000 flea</i>			
165.....	20	7	Do. ²
166.....	20	7	Fever (female). ⁴
167.....	40	11	Typhus.
168.....	40	11	Do.
<i>Guinea pigs inoculated with 1/128000 flea</i>			
169.....	40	8	Do.
170.....	40	11	Do.
171.....	40	11	Do.

¹ The number of whole days of normal temperature succeeding the day of inoculation was considered the incubation period.

² The diagnosis of typhus was based on the occurrence of typical febrile and scrotal reactions.

³ Subsequently tested for immunity and found non-immune.

⁴ Subsequently tested for immunity to guinea pig passage virus (endemic typhus) and found immune.

⁵ Sacrificed for transfer of virus. Strain established and identified as endemic typhus.

⁶ Immunity test valueless.

The results given in Table 2 show an enormous multiplication of endemic typhus virus in infected fleas. While $\frac{1}{2}$ flea did not contain enough virus surely to infect a guinea pig until three days after feeding on infected rats, $\frac{1}{2}$ of a flea was sufficient to infect a guinea pig after that time. As no end point was reached in the titrations after the third day, no conclusion can be drawn as to the time at which the concentration of the virus in the flea reaches its height. As there is no definite shortening of the incubation period in the guinea pig after the fifth or sixth day from the infective feeding of the fleas, it is possible that the virus reaches its highest concentration about that time.

The guinea pigs which failed to develop typical endemic typhus and did not die and occasional animals chosen at random from those developing typical reactions were subsequently tested for immunity to known endemic typhus virus.

In order surely to identify the virus recovered from the fleas, two of the guinea pigs reacting to $\frac{1}{8000}$ of a flea and one reacting to $\frac{1}{16000}$ of a flea were sacrificed, and strains of virus were established in fresh animals. These strains were identified as endemic typhus strains by the following six criteria on which we have come to rely for diagnosis:

1. Typical febrile reaction and typical scrotal involvement in guinea pigs.

2. Negative blood cultures from guinea pigs at the height of their reaction.

3. Intracellular rickettsia in smears made from the tunica vaginalis of guinea pigs reacting typically.

4. The development in rabbits of agglutinins for *B. proteus* X₁₉, type O.

5. Typical histologic lesions in the brains of guinea pigs.

6. Clear-cut cross-immunity between the unknown strain and known strains of typhus.

It will be noted that some of the guinea pigs inoculated with the flea emulsion made 40 days after the infective feeding of the fleas show a lengthened incubation period, suggesting somewhat that the concentration of virus in the flea or its infectivity reaches a maximum and then diminishes.

In the examination of smears made from fleas at the time when the daily emulsions were prepared, no rickettsia were found in smears of fleas made in the first two days after the day of the infective feeding of the fleas, while rickettsia were readily found in fleas smeared after that time.

CONCLUSION

Endemic typhus virus multiplies enormously in the rat flea *Xenopsylla cheopis*.

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SICKNESS AMONG MALE INDUSTRIAL EMPLOYEES DURING THE LAST THREE MONTHS OF 1931, AND A SUMMARY OF SICKNESS FREQUENCY BY YEARS SINCE 1920

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FINAL QUARTER OF 1931

There was no increase in the frequency of disabling sickness among a large group of male industrial employees during the last three months of 1931 as compared with the corresponding period either of 1930 or of 1929; in fact, a small decrease was recorded from the rate in the fourth quarter of 1930, and a substantial decrease (17 per cent) from the frequency in the last quarter of 1929.

These sickness rates are based on cases of illness causing absence from work for a period longer than one week among the members of 27 industrial sick-benefit associations or company relief departments reporting periodically to the United States Public Health Service. The records covered about 144,000 men in the final quarter of 1931, about 154,000 in the corresponding period of 1930, and approximately 160,000 in the same period of 1929. For 1930 and 1931 the sickness rates apply to the same industrial companies, and for 1929, to 23 of the 27 companies included in 1930 and 1931.

These sickness data in the main apply to employed men, although many of them work only on a part-time basis. A small proportion are unemployed; the by-laws applicable to about one-seventh of the population under consideration state that membership may be retained during furlough or lay-off if dues are paid.

During the last three months of 1931, as in the two preceding quarter years of 1931, the frequency of nonindustrial accidents was greater than in the corresponding period of either of the two earlier years.

The respiratory-disease rate was slightly lower than in the last quarter of 1930, and considerably below the 1929 incidence. Since the beginning of 1932, however, reports of illness of a respiratory nature have become more numerous, and so it seems doubtful whether, after adjusting for seasonal variation in sickness frequency, the health of the industrial group under consideration will present such a favorable picture in the first quarter of 1932 as in the closing months of 1931.

Respiratory diseases which decreased in frequency as compared with the rate in the fourth quarter of either of the two preceding years include influenza or grippe, bronchitis (acute and chronic), pneumonia (all forms), and tuberculosis of the lungs. Each of the three periods under review is regarded as free from epidemics of a respiratory nature.

TABLE 1.—*Frequency of disability lasting 8 calendar days or longer in the fourth quarter of 1931, compared with the same quarter of 1930 and 1929. Male morbidity experience of 27 industrial establishments which reported their cases to the United States Public Health Service during all three years*¹

Diseases and disease groups which caused disability. (Numbers in parentheses are disease title numbers from the International List of the Causes of Death, third revision, Paris, 1920)	Annual number of disabilities per 1,000 men in fourth quarter of—		
	1931	1930	1929
Sickness and nonindustrial injuries ²	82.5	87.2	96.6
Nonindustrial injuries.....	13.6	13.0	13.1
Sickness ²	68.9	74.2	83.5
Respiratory diseases	24.8	27.6	37.0
Influenza and grippé (11).....	11.1	11.6	15.1
Bronchitis, acute and chronic (99).....	3.1	4.2	6.2
Pneumonia, all forms (100, 101).....	1.6	2.5	3.1
Diseases of the pharynx and tonsils (109).....	4.7	4.3	6.8
Tuberculosis of the respiratory system (31).....	.6	.8	1.0
Other respiratory diseases (97, 98, 102-107).....	3.7	4.2	4.8
Nonrespiratory diseases	44.0	46.6	46.4
Diseases of the stomach, cancer excepted (111, 112).....	3.8	3.9	3.8
Diarrhea and enteritis (114).....	1.3	1.5	1.4
Appendicitis (117).....	3.5	3.4	2.8
Hernia (118a).....	1.4	2.1	1.3
Other digestive diseases (108, 110, 115, 116, 118b-127).....	2.6	2.9	2.5
Rheumatic group, total.....	10.1	10.4	12.1
Rheumatism, acute and chronic (51, 52).....	4.2	4.9	5.0
Diseases of the organs of locomotion (158).....	3.7	3.3	4.0
Neuralgia, neuritis, sciatica (82).....	2.2	2.2	3.1
Neurasthenia (part of 84).....	1.3	1.2	1.1
Other diseases of the nervous system (70-81, 83, part of 84).....	1.0	1.0	1.1
Diseases of the heart and arteries, and nephritis (87-92, 96, 128, 129).....	3.4	3.5	3.6
Other genito-urinary diseases (130-136).....	2.2	2.3	2.1
Diseases of the skin (151-154).....	3.0	3.7	3.5
Epidemic and endemic diseases except influenza (1-10, 12-25).....	1.6	1.6	1.8
Ill-defined and unknown causes (205).....	2.2	1.6	1.7
All other diseases ² (26-30, 32-37, 41-50, 53-60, 85, 86, 93-95, 135-157, 160, 164).....	6.6	7.5	6.6
Average number of males covered in the record.....	143,891	154,165	160,023

¹ Except that the rates for 1929 cover 23 of the 27 establishments included in 1930 and 1931.

² Exclusive of disability from the venereal diseases.

For nonrespiratory diseases as a whole a decrease of about 5 per cent is indicated when the computation is based on the rate for either one of the two earlier periods.

No significant decrease appears to have occurred of late in the frequency of the numerically important diseases of the digestive system. For rheumatism (acute and chronic), and for diseases of the skin, dwindling incidence rates have appeared, not only in the final period of 1931, but also in the earlier quarters of 1931 under comparison with the corresponding periods of 1930 and 1929.

The only disease category (with the exception of ill-defined and unknown causes) which shows a higher rate in the last three months of 1931 than in the same quarter of either 1929 or 1930 is neurasthenia, the rate for which has been consistently, although moderately, higher since April, 1931, than in either of the two immediately preceding years. Mention was made in earlier reports of a relatively high rate of neurasthenia in 1921. Further analyses of that rate revealed an error in the grouping of diseases of the nervous system

which unduly enhanced the neurasthenia rate. The corrected rate was not high as compared with its subsequent frequency.

YEAR 1931 AS A WHOLE COMPARED WITH PRECEDING YEARS

In 1931 as a whole the frequency of cases of disabling sickness of eight days and longer was slightly higher than in 1930, but still 5 or 10 per cent below the average rate for the 10 preceding years, the percentage decrease depending upon which group of establishments is considered, i. e., whether all reporting establishments, or only those which reported throughout the 11 years. Respiratory diseases as a whole decreased from the 10-year average relatively more than did total sickness. Of particular interest is the rate of sickness exclusive of influenza, because the latter caused from 14 to 28 per cent of all the cases of sickness exclusive of nonindustrial accidents during the years under review, and has not been amenable to the control measures thus far instituted. It may be observed in Table 2 that no year of record shows a lower rate of sickness exclusive of influenza than occurred in 1931. For nonrespiratory diseases as a group, the rate was slightly below the average for the preceding 10 years.

TABLE 2.—Frequency of specified causes of disability lasting eight consecutive calendar days or longer per 1,000 male industrial workers representing various industries, by years, from 1921 to 1931, inclusive

Year in which disability began	Sickness and nonindustrial injuries ¹		Sickness		Respiratory diseases ²		Sickness exclusive of influenza		Nonrespiratory diseases		Average number of men covered in the record from all reporting establishments
	All reporting establishments	Establishments which reported throughout	All reporting establishments	Establishments which reported throughout	All reporting establishments	Establishments which reported throughout	All reporting establishments	Establishments which reported throughout	All reporting establishments	Establishments which reported throughout	
1921	90.9	86.9	82.8	79.5	34.1	32.5	60.9	68.3	48.7	47.0	66,094
1922	96.4	101.1	88.6	93.5	44.0	46.7	67.7	71.9	44.6	46.8	60,408
1923	95.1	99.5	86.1	90.9	44.3	47.7	63.4	65.7	41.8	43.2	80,910
1924	96.0	92.8	86.4	83.1	38.2	35.9	69.5	66.9	48.2	47.2	114,065
1925	105.9	95.3	95.0	85.4	44.1	39.5	73.7	67.4	50.9	48.9	114,431
1926	111.9	103.6	100.7	93.2	50.4	48.2	73.6	67.7	50.3	45.0	118,886
1927	103.7	89.5	92.3	79.2	40.2	34.4	74.6	64.7	52.1	44.8	165,465
1928	113.4	102.7	102.5	93.4	50.6	45.9	73.4	69.3	51.9	47.5	163,537
1929	112.4	101.4	99.9	89.2	47.8	41.7	73.9	68.1	52.1	47.5	194,451
1930	94.1	88.7	81.8	75.8	32.0	28.5	64.4	64.4	49.8	45.6	188,714
1931	94.6	83.7	82.2	82.4	34.9	36.9	63.3	61.2	47.3	45.5	171,694
Ten preceding years ³	102.0	96.1	91.6	86.3	42.6	40.3	70.8	67.4	49.0	46.0	128,223

¹ Industrial accidents and the venereal diseases are not reported.

² Title numbers 11, 31, 97 to 107, and 109 in the International List of the Causes of Death, third revision, Paris, 1920.

³ 1921-1930, inclusive.

During the last 11 years, the lowest influenza rates occurred in 1921 and in 1930, when this disease accounted for only 14 to 16 per cent of total illness cases exclusive of nonindustrial injuries. In 1931 the

influenza rate was considerably above this minimum, causing nearly one-fourth of all the sickness cases under consideration. A widespread influenza epidemic, it will be recalled, occurred during the first quarter of the year. It was not severe enough, however, to increase appreciably the frequency of pneumonia, and the year as a whole recorded one of the most favorable pneumonia rates experienced by the industrial population of the country since 1917.

The lowest frequency of new cases of tuberculosis of the respiratory system is shown for 1931. However, the indicated rate may be enhanced somewhat if a number of cases at present ill-defined or regarded as bronchitis are diagnosed later as tuberculosis of the lungs. But even after allowing for such a contingency, the rate would probably remain relatively low.

A remarkable decrease is indicated in 1931 for diseases of the upper respiratory tract, especially for bronchitis and for diseases of the pharynx and tonsils (chiefly tonsillitis), the rates for these diseases as well as for "other diseases of the respiratory system" being below the frequency shown for any of the preceding 10 years.

TABLE 3.—Frequency of specified respiratory diseases which caused disability for 8 consecutive calendar days or longer per 1,000 male industrial workers representing various industries, by years, from 1921 to 1931 inclusive

Year in which disability began	Diseases causing disability (numbers in parentheses are disease title numbers from the International List of the Causes of Death, third revision, Paris, 1920)											
	Influenza, gripe (11)		Bronchitis, acute and chronic (99)		Diseases of the pharynx and tonsils (100)		Pneumonia, all forms (100, 101)		Tuberculosis of the respiratory system (31)		Other diseases of the respiratory system (97, 98, 102-107)	
	A*	B*	A*	B*	A*	B*	A*	B*	A*	B*	A*	B*
1921.....	12.9	11.2	5.8	5.5	5.9	6.1	2.6	2.4	1.9	2.0	5.0	5.3
1922.....	20.9	21.6	5.4	6.6	5.3	5.7	3.8	3.6	1.9	1.9	6.7	7.3
1923.....	22.7	25.2	5.3	5.4	5.7	5.6	3.8	3.3	1.2	1.1	5.6	7.1
1924.....	16.9	16.2	5.0	4.5	6.4	5.3	3.1	3.1	1.3	1.3	5.5	5.6
1925.....	21.3	18.0	5.7	5.5	7.0	6.3	3.5	3.2	1.2	1.1	5.4	5.4
1926.....	37.1	25.5	6.6	7.1	7.1	6.7	3.1	3.2	1.6	1.4	4.9	4.3
1927.....	17.7	14.5	6.0	5.3	6.4	6.4	3.3	2.7	1.6	1.1	5.2	4.4
1928.....	29.1	24.1	5.7	6.0	5.9	6.1	3.4	3.4	1.1	1.2	5.4	5.1
1929.....	26.0	21.1	5.3	5.1	7.2	6.8	3.1	2.7	1.3	1.2	5.0	4.8
1930.....	13.3	11.4	4.6	4.4	6.0	6.1	2.5	2.3	1.1	1.2	4.5	4.6
1931.....	18.9	21.2	3.6	3.6	5.2	4.7	2.1	2.3	1.0	.9	4.1	4.2
Ten preceding years ¹	20.8	18.9	5.6	5.5	6.3	6.1	3.2	3.0	1.4	1.4	5.3	5.4

*A—all reporting establishments; B—establishments which reported throughout.

¹ 1921-1930, inclusive.

The rate for digestive diseases as a whole was below the average rate for the preceding 10 years, but certain numerically important diseases of the digestive system failed to pursue a declining trend line. The most notable decrease as compared either with 1930 or with the 10-year average was recorded for diseases of the stomach (except cancer). A favorable rate, also, was shown for diarrhea and enteritis.

Appendicitis, however, was reported at exactly the average incidence exhibited during the preceding 10 years, and cases of hernia were more numerous than in the preceding year or in the 10-year period. For other diseases of the digestive system the 1931 rate was also relatively high.

TABLE 4.—Frequency of specified diseases of the digestive system which caused disability for eight consecutive calendar days or longer per 1,000 male industrial workers representing various industries, by years, from 1921 to 1931, inclusive

Year in which disability began	Diseases causing disability (numbers in parentheses are disease title numbers from the International List of the Causes of Death, third revision, Paris, 1920)											
	Digestive diseases, total (108, 110-127)		Diseases of the stomach except cancer (111, 112)		Diarrhea and enteritis (114)		Appendicitis (117)		Hernia (118a)		Other diseases of the digestive system (108, 110, 115, 116, 118b-127)	
	A*	B*	A*	B*	A*	B*	A*	B*	A*	B*	A*	B*
1921.....	13.9	14.0	4.2	4.1	2.2	2.0	3.3	3.6	2.1	2.2	2.1	2.1
1922.....	12.2	13.7	4.1	4.7	1.8	1.9	2.9	3.4	1.5	1.6	1.9	2.1
1923.....	11.4	12.5	3.9	4.0	1.8	1.8	2.9	3.5	1.2	1.5	1.6	1.7
1924.....	13.3	13.2	4.6	4.5	1.9	1.5	3.3	3.3	1.3	1.6	2.2	2.3
1925.....	14.8	14.0	5.2	5.0	1.8	1.4	3.9	3.6	1.4	1.6	2.5	2.4
1926.....	14.5	13.0	5.2	3.9	1.5	1.4	3.6	3.3	1.6	2.0	2.6	2.4
1927.....	15.1	13.6	5.0	4.1	1.4	1.2	4.5	4.3	1.6	1.5	2.6	2.5
1928.....	14.6	14.5	4.7	3.7	1.3	1.5	4.2	4.7	1.8	2.0	2.6	2.6
1929.....	15.6	15.8	4.7	4.7	1.5	1.7	4.5	4.5	1.8	2.0	3.1	2.9
1930.....	14.8	14.4	4.7	4.4	1.5	1.4	4.0	3.7	1.7	2.1	2.9	2.6
1931.....	13.4	13.5	4.0	3.0	1.2	1.5	3.7	3.8	1.8	2.2	2.7	3.0
10 preceding years ¹	14.0	13.9	4.6	4.3	1.7	1.6	3.7	3.8	1.6	1.8	2.4	2.4

* A = all reporting establishments; B = establishments which reported throughout.

¹ 1921-1930, inclusive.

The incidence rate of nonrespiratory, nondigestive diseases was below the annual average frequency from 1921 to 1930. Within this very broad class of diseases, however, certain subgroups showed rates in 1931 which were in excess of the 10-year average. Among these were certain diseases of the circulatory system, especially diseases of the heart, diseases of the genito-urinary system and annexa (except nephritis), and diseases of the nervous system.

On the favorable side, attention should be called to the decrease in the frequency of rheumatism (acute and chronic), diseases of the skin, and the epidemic and endemic disease group exclusive of influenza. In the last-named group are typhoid, smallpox, measles, whooping cough, diphtheria, mumps, erysipelas, and other important epidemic and endemic diseases which as a group decreased in frequency in 1931 in the population under consideration.

TABLE 5.—Frequency of specified nonrespiratory, nondigestive diseases which caused disability for eight consecutive calendar days or longer per 1,000 male industrial workers representing various industries, by years, from 1921 to 1931, inclusive

Year in which disability began	Diseases causing disability (numbers in parentheses are disease title numbers from the International List of the Causes of Death, third revision, Paris, 1920)									
	Nonrespiratory, non-digestive total		Diseases of the circulatory system except diseases of the veins (87-92, 94-96)		Diseases of the veins (93)		Diseases of the heart (87-90)		Nephritis, acute and chronic (128, 129)	
	A*	B*	A*	B*	A*	B*	A*	B*	A*	B*
1921.....	34.8	33.0	2.4	1.8	1.7	2.1	1.6	1.5	0.7	0.6
1922.....	32.4	33.1	2.0	1.9	1.8	2.1	1.3	1.2	.8	.8
1923.....	30.4	30.7	1.8	1.7	1.3	1.5	1.2	1.0	.8	.8
1924.....	34.9	34.0	2.3	2.4	1.3	1.4	1.5	1.5	.7	.9
1925.....	36.1	31.9	2.8	2.7	1.7	1.6	1.7	1.5	.8	.7
1926.....	35.8	32.0	2.8	2.4	1.5	1.6	1.9	1.7	.8	.5
1927.....	37.0	31.2	3.2	2.9	1.5	1.2	2.1	1.9	.8	.7
1928.....	37.3	33.0	3.4	3.3	1.7	1.8	2.1	2.2	.8	.7
1929.....	36.5	31.7	3.4	3.4	1.7	1.6	2.2	2.3	.8	.7
1930.....	35.0	31.2	3.4	3.3	1.6	1.8	2.1	2.0	.7	.6
1931.....	33.9	32.0	3.2	3.5	1.8	1.4	2.0	2.4	.7	.6
Ten preceding years ¹	35.0	32.1	2.8	2.6	1.6	1.7	1.8	1.7	.8	.7
	Other diseases of the genito-urinary system and annura (150-156)		Neuralgia, neuritis, sciatica (82)		Neurasthenia and the like (part of 84)		Other diseases of the nervous system (70-81, 83, part of 84)		Diseases of the eye (85)	
	A*	B*	A*	B*	A*	B*	A*	B*	A*	B*
	A*	B*	A*	B*	A*	B*	A*	B*	A*	B*
1921.....	1.8	1.8	1.6	1.5	1.3	1.3	1.2	1.1	0.8	0.7
1922.....	1.8	1.8	2.3	2.5	1.5	1.7	.8	.7	.9	.9
1923.....	1.5	2.0	1.6	1.8	1.2	1.3	.7	.6	.9	.8
1924.....	2.0	1.8	2.3	2.1	1.6	1.9	.7	.8	1.2	1.0
1925.....	1.9	1.8	2.0	1.6	1.8	1.9	.8	.8	1.0	.9
1926.....	2.1	2.0	2.1	1.8	1.6	1.8	.8	.6	1.3	1.1
1927.....	2.2	1.7	2.3	1.6	1.4	1.7	1.0	.8	1.4	1.0
1928.....	2.2	2.1	2.2	1.6	1.4	1.6	1.0	1.0	1.1	1.0
1929.....	2.2	2.1	2.5	2.0	1.3	1.7	1.1	.9	1.0	.8
1930.....	2.4	2.2	2.3	1.6	1.2	1.5	1.0	1.0	1.1	1.0
1931.....	2.3	2.5	2.1	2.0	1.5	1.9	1.1	1.0	1.0	1.1
Ten preceding years ¹	2.0	1.9	2.1	1.8	1.4	1.7	.9	.8	1.1	.9
	Diseases of the ear and of the mastoid process (86)		Rheumatism, acute and chronic (51, 52)		Lumbago and other diseases of the organs of locomotion (158)		Diseases of the skin (151-154)		Epidemic and endemic diseases except influenza (1-10, 12-25)	
	A*	B*	A*	B*	A*	B*	A*	B*	A*	B*
	A*	B*	A*	B*	A*	B*	A*	B*	A*	B*
1921.....	0.6	0.5	5.6	4.6	2.0	2.3	3.6	3.6	2.6	2.7
1922.....	.5	.5	4.6	4.2	3.4	3.3	3.6	3.6	2.1	2.2
1923.....	.4	.5	4.7	4.4	2.7	2.8	3.3	2.8	2.4	2.7
1924.....	.5	.5	6.5	6.5	3.2	2.7	3.6	2.8	3.4	3.4
1925.....	.8	.8	6.4	5.2	3.3	2.1	3.5	2.9	3.4	3.0
1926.....	.7	.7	5.8	4.9	3.8	2.8	3.8	3.0	2.5	2.0
1927.....	.5	.6	6.3	5.1	3.5	2.7	4.7	3.1	2.4	2.3
1928.....	.7	.8	6.4	5.4	4.0	2.8	4.4	3.2	2.7	1.8
1929.....	.7	.6	5.6	4.8	3.9	2.8	4.2	3.0	2.6	1.6
1930.....	.5	.4	5.6	4.8	3.5	2.3	3.8	3.0	2.6	1.8
1931.....	.7	.8	5.4	4.7	3.3	2.2	3.2	2.7	2.2	1.9
Ten preceding years ¹.....	.6	.6	5.7	5.0	3.4	2.7	3.8	3.1	2.7	2.3

* A—all reporting establishments; B—establishments which reported throughout.

¹ 1921-1930, inclusive.

TABLE 5.—Frequency of specified nonrespiratory, nondigestive diseases which caused disability for eight consecutive calendar days or longer per 1,000 male industrial workers representing various industries, by years, from 1921 to 1931, inclusive—Continued

Year in which disability began	Diseases causing disability (numbers in parentheses are disease title numbers from the International List of the Causes of Death, third revision, Paris, 1929)									
	Cancer—all forms (43-49)		Other general diseases (26-30, 32-37, 41, 42, 50, 53-60)		Diseases of the bones and joints (155, 156)		Ill-defined and unknown causes of disability (205)		Nonindustrial injuries (165-203)	
	A*	B*	A*	B*	A*	B*	A*	B*	A*	B*
1921.....	0.6	0.6	3.5	3.7	2.0	2.1	1.8	2.0	8.1	7.4
1922.....	.6	.6	2.2	2.0	1.5	1.8	2.0	2.5	7.8	7.6
1923.....	.1	.4	2.0	2.2	1.3	1.6	3.1	2.8	9.0	8.6
1924.....	.6	.7	2.3	2.0	.6	.5	2.2	2.6	9.6	9.7
1925.....	.6	.6	2.5	2.4	.6	.6	2.3	2.3	10.9	9.9
1926.....	.8	.9	2.6	2.7	.6	.7	2.3	2.5	11.2	10.4
1927.....	.7	.7	2.6	2.5	1.0	.5	1.5	2.1	11.4	10.3
1928.....	.4	.4	2.5	3.2	.7	.6	1.7	1.7	10.9	9.3
1929.....	.4	.4	2.5	2.8	.8	.4	1.8	2.1	12.5	12.2
1930.....	.5	.5	2.4	3.0	.7	.6	1.7	1.8	12.3	12.0
1931.....	.6	.5	2.3	3.0	.6	.7	1.9	1.6	12.4	11.3
Ten preceding years ¹.....	.6	.6	2.5	2.6	1.0	.9	2.0	2.2	10.4	9.8

* A—all reporting establishments; B—establishments which reported throughout.

¹ 1921-1930, inclusive.

DEATH RATES IN A GROUP OF INSURED PERSONS

Rates for Principal Causes of Death for February, 1932

The accompanying table is taken from the Statistical Bulletin for March, 1932, issued by the Metropolitan Life Insurance Co., and presents the mortality record of the industrial insurance department of the company for February, 1932, as compared with that for the preceding month and for February, 1931. It also presents a comparison of the cumulative death rates for January-February for the two years. The rates in this group of insured persons in recent years are based on numbers varying between 17,000,000 and 19,000,000. The annual general death rate for this group in the past few years has averaged about 72 per cent of the death rate for the registration area of the United States.

The Bulletin states:

The unprecedentedly favorable health conditions which prevailed in January continued throughout February. In the former month the death rate was 7.6 per cent below the previous low point; in February it was 7.8 per cent under the former February minimum. In Canada and in the far western section of the United States, the cumulative death rates of insured wage earners at the end of February were also lower than ever before, at this time of the year. Such reports as are available for the general population of the United States supplement those for this group of policyholders and show that depression and unemployment have not yet seriously affected the public health. Nowhere in the United States or Canada has there been, this year, widespread prevalence of any epidemic

disease. There has been much sickness from influenza, it is true; but in only a few instances has the disease been of the type which runs quickly into pneumonia and causes death. In fact, we have never before experienced in January and February as low pneumonia mortality rates as those which have prevailed during these months in 1932.

With respect to the more important causes of death, the situation is, for the most part, impressively favorable. The principal epidemic diseases of childhood, with the exception of diphtheria, show lower death rates than at this time last year; and diphtheria has registered the same figure as at this time in 1931—which was the lowest ever recorded for this disease. The tuberculosis mortality rate has improved by nearly 14 per cent. With this favorable start, we may confidently look forward to the attainment of another new minimum in tuberculosis mortality this year. With diabetes, for the first time since 1924, there appears to be reason to expect a break in the series of continuously increasing mortality rates. The death rate from cardiac diseases has dropped 9.4 per cent as compared with that for the January-February period of 1931; that for cerebral hemorrhage, 8.7 per cent; that for pneumonia 37.4 per cent; for diarrhea and enteritis, 19.8 per cent; for chronic nephritis, 6 per cent; and for accidents, 11.1 per cent.

The unfavorable items are cancer and automobile fatalities. For the former, the year-to-date death rate is nearly 3 per cent higher than at this time in 1931, during which year cancer mortality increased sharply to a new maximum. There have been more automobile fatalities than ever before during the like period of any year.

Death rates (annual basis) per 100,000 for principal causes of death

[Industrial insurance department, Metropolitan Life Insurance Co.]

Cause of death	Annual rate per 100,000 lives exposed ¹				
	February, 1932	January, 1932	February, 1931	Cumulative, Janu- ary-February	
				1932	1931
Total, all causes.....	878.6	870.0	1,034.4	874.2	1,010.9
Typhoid fever.....	1.5	1.5	1.3	1.5	1.4
Measles.....	2.4	2.2	3.0	2.3	2.8
Scarlet fever.....	3.6	3.3	4.1	3.0	3.7
Whooping cough.....	3.4	2.7	4.6	3.1	4.3
Diphtheria.....	6.5	6.1	6.7	6.3	6.3
Influenza.....	22.5	15.5	58.6	18.9	43.5
Tuberculosis (all forms).....	70.0	67.7	81.9	68.8	70.9
Tuberculosis of respiratory system.....	63.0	60.1	72.2	61.5	71.0
Cancer.....	96.9	83.4	84.0	85.1	82.7
Diabetes mellitus.....	22.3	22.1	28.3	22.2	24.3
Cerebral hemorrhage.....	61.7	65.7	64.2	63.8	69.9
Organic diseases of heart.....	158.1	158.7	171.9	157.4	173.8
Pneumonia (all forms).....	84.3	83.6	146.7	84.0	134.2
Other respiratory diseases.....	12.3	10.6	18.1	11.4	14.4
Diarrhea and enteritis.....	7.8	8.5	9.1	8.1	10.1
Bright's disease (chronic nephritis).....	68.0	72.6	78.1	70.4	74.9
Puerperal state.....	11.4	9.9	10.9	10.6	11.0
Suicides.....	10.4	8.7	9.3	9.5	8.5
Homicides.....	6.3	6.2	5.6	6.2	6.2
Other external causes (excluding suicides and homi- cides).....	44.6	33.0	51.5	49.0	55.1
Traumatism by automobiles.....	15.7	22.3	15.3	19.6	18.7
All other causes.....	194.5	190.7	206.5	192.5	206.6

¹ All figures in this table include insured infants under 1 year of age. The rates for 1931 and 1932 are subject to slight correction, since they are based on provisional estimates of lives exposed to risk.

COURT DECISION RELATING TO PUBLIC HEALTH

Tularæmia held compensable under workmen's compensation act.— (Kentucky Court of Appeals; Great Atlantic and Pacific Tea Co. v. Sexton, 46 S. W. (2d) 87; decided Feb. 2, 1932.) In a negligence action brought to recover damages, it was alleged that the plaintiff, while an employee of a meat market, contracted tularæmia in the course of his work of skinning and dressing rabbits. At the time the plaintiff dressed the rabbits, he had a small abrasion or scratch on one of his fingers. A jury returned a verdict in plaintiff's favor and, from the judgment based thereon, the company operating the meat market appealed.

The court of appeals, in passing on the matter, said that there was for determination the question of whether or not the injury was compensable under the workmen's compensation act. The pertinent portion of such act read as follows:

This act * * * shall affect the liability of the employers subject thereto to their employees for personal injuries sustained by the employee by accident arising out of and in the course of his employment or for death resulting from such accidental injury: *Provided, however,* That personal injury by accident, as herein defined, shall not include diseases, except where the disease is the natural and direct result of a traumatic injury by accident. * * *

The court, after considering the meaning of the word "accident," reached the conclusion that the injury in the instant case "was sustained by accident" within the meaning of the compensation law, and then turned to the question of whether the disease was the "natural and direct result of traumatic injury" within the meaning of the compensation statute. In this connection there was quoted a definition of "trauma" by Webster as being "a wound or injury directly produced by causes external to the body," and concerning this the court said:

It will be noted that this does not include within its scope and meaning only physical force in the sense of a blow, a current of electricity, or like terms implying power, vigor, violence, or energy in the commonly accepted meaning of its terms, but may be as consistently construed to include any independent influence or cause external to the body coming into direct contact with and causing injury to the physical structures thereof.

It was pointed out that the injury in the present case could be traced directly to the employee's coming in contact with meats laden with tularæmia germs; that the time, place, and cause of the injury were determinable with reasonable certainty; that, as an immediate result of the contact, symptoms peculiar to the disease manifested themselves; and that it was not a gradual development arising out of natural dangers incident to the employment but was sudden, unexpected, and unusual, without any of the distinctive features of an occupational disease. The conclusion reached by the court was that

the employee's disease was "the natural and direct result of traumatic injury by accident sustained while in the course of his employment."

The judgment of the lower court was reversed and the cause remanded for another trial and proceedings consistent with the opinion.

DEATHS DURING WEEK ENDED APRIL 9, 1932

Summary of information received by telegraph from industrial insurance companies for the week ended April 9, 1932, and corresponding week of 1931. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

	Week ended Apr. 9, 1932	Correspond- ing week, 1931
Policies in force.....	73,744,524	75,140,465
Number of death claims.....	15,945	17,335
Death claims per 1,000 policies in force, annual rate.....	11.3	12.0
Death claims per 1,000 policies, first 14 weeks of year, annual rate.....	10.5	11.2

Deaths¹ from all causes in certain large cities of the United States during the week ended April 9, 1932, infant mortality, annual death rate, and comparison with corresponding week of 1931. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

[The rates furnished in this summary are based upon mid-year population estimates derived from the 1930 census]

City	Week ended Apr. 9, 1932				Corresponding week, 1931		Death rate ² for the first 14 weeks	
	Total deaths	Death rate ¹	Deaths under 1 year	Infant mortality rate ³	Death rate ¹	Deaths under 1 year	1932	1931
Total (85 cities).....	8,927	12.7	648	54	13.2	793	12.7	13.9
Akron.....	34	6.7	1	12	11.1	7	7.7	8.6
Albany.....	36	14.4	2	41	18.6	3	15.0	15.6
Atlanta.....	98	18.1	6	58	18.6	14	14.5	16.3
White.....	55	15.3	6	88	11.3	8	11.4	13.0
Colored.....	43	23.5	0	0	24.1	6	20.5	22.7
Baltimore.....	226	14.4	12	42	16.0	21	14.9	17.4
White.....	174	13.6	5	23	14.9	17	13.9	16.0
Colored.....	52	18.1	7	113	20.6	4	19.8	23.6
Birmingham.....	59	11.1	3	31	15.9	8	12.2	15.6
White.....	28	8.5	2	33	11.9	1	10.0	12.2
Colored.....	31	15.4	1	27	22.4	7	15.8	21.7
Boston.....	244	16.2	22	66	14.8	19	15.7	16.4
Bridgeport.....	34	12.1	4	71	12.4	4	12.2	13.1
Buffalo.....	188	16.7	19	91	14.6	15	14.3	15.5
Cambridge.....	31	14.2	3	62	16.0	3	14.2	14.0
Camden.....	48	21.1	6	106	16.7	3	16.4	18.1
Canton.....	22	10.6	1	25	11.2	2	10.8	11.4
Chicago.....	602	10.3	44	43	11.5	70	11.0	12.0
Cincinnati.....	147	16.6	17	109	19.3	9	16.9	18.3
Cleveland.....	242	13.7	18	58	12.8	15	12.1	12.8
Columbus.....	102	17.8	3	30	15.7	6	14.9	15.3
Dallas.....	64	11.8	6	-----	12.6	9	11.7	12.7
White.....	46	10.3	5	-----	12.5	7	10.9	11.2
Colored.....	18	19.3	1	-----	13.2	2	16.0	20.0
Dayton.....	54	11.9	4	57	11.7	5	11.9	12.6
Denver.....	85	15.1	7	69	14.7	5	16.8	18.8
Des Moines.....	38	13.6	3	51	9.4	3	12.7	12.2
Detroit.....	270	8.2	20	36	9.3	26	8.7	9.8
Duluth.....	20	10.3	1	29	16.9	3	10.3	12.0
El Paso.....	39	18.6	3	-----	14.9	6	16.3	17.8
Erie.....	36	15.8	3	64	12.8	3	12.4	11.5
Evansville.....	24	11.8	3	100	12.0	1	10.3	12.1
Fall River.....	33	15.0	3	80	13.6	2	13.2	14.0

See footnotes at end of table.

Deaths¹ from all causes in certain large cities of the United States during the week ended April 9, 1932, infant mortality, annual death rate, and comparison with corresponding week of 1931. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)—Continued

[The rates furnished in this summary are based upon mid-year population estimates derived from the 1930 census]

City	Week ended Apr. 9, 1932				Corresponding week, 1931		Death rate ² for the first 14 weeks	
	Total deaths	Death rate ²	Deaths under 1 year	Infant mortality rate ³	Death rate ²	Deaths under 1 year	1932	1931
Flint.....	32	9.8	6	88	6.4	3	9.1	7.8
Fort Wayne.....	30	12.9	2	52	14.9	0	11.2	12.2
Fort Worth ⁴	24	7.4	1	—	14.3	7	10.7	12.2
White.....	21	7.6	1	—	14.5	7	10.3	11.8
Colored.....	3	5.9	0	—	13.4	0	13.1	14.0
Grand Rapids.....	24	7.2	1	17	9.4	4	9.7	9.7
Houston ⁴	68	11.0	5	—	10.3	3	11.2	11.7
White.....	46	10.1	5	—	10.1	3	10.6	10.8
Colored.....	22	13.4	0	—	10.7	0	13.1	14.3
Indianapolis ⁴	101	14.1	6	49	15.4	4	14.1	15.5
White.....	88	14.0	5	46	14.8	4	13.6	14.9
Colored.....	13	14.7	1	69	19.6	0	17.5	19.9
Jersey City.....	73	11.9	5	41	13.4	10	12.1	14.0
Kansas City, Kans. ⁴	28	11.8	2	44	12.7	0	13.5	15.8
White.....	19	9.9	1	27	11.0	0	13.0	14.5
Colored.....	9	19.9	1	128	20.0	0	15.4	21.2
Kansas City, Mo.....	110	13.8	4	45	13.8	10	13.5	15.4
Knoxville ⁴	25	10.7	0	0	12.9	4	12.9	14.6
White.....	18	10.1	0	0	10.8	3	11.8	13.5
Colored.....	5	14.3	0	0	23.4	1	18.8	20.1
Long Beach.....	25	8.1	3	79	14.4	0	10.1	10.8
Los Angeles.....	239	9.0	15	44	11.4	33	11.7	11.6
Louisville ⁴	75	12.7	1	9	17.8	5	14.7	17.8
White.....	62	12.4	1	10	16.6	5	13.2	16.0
Colored.....	13	14.2	0	0	24.0	0	23.1	27.8
Lowell ⁷	27	14.1	1	26	10.4	1	14.9	14.9
Lynn.....	35	17.8	3	85	7.1	3	12.4	12.5
Memphis ⁴	86	17.1	7	76	15.9	5	17.2	18.1
White.....	39	12.5	2	34	15.7	1	13.0	15.5
Colored.....	47	24.4	5	151	16.3	4	23.9	22.4
Miami ⁴	29	13.3	3	84	16.2	3	12.8	14.5
White.....	18	10.6	1	39	13.2	2	12.0	13.6
Colored.....	11	22.7	2	201	20.8	1	15.8	17.8
Milwaukee.....	100	8.7	12	57	9.6	9	9.5	10.8
Minneapolis.....	99	10.7	7	46	11.7	16	11.6	12.3
Nashville ⁴	57	19.0	5	75	18.4	5	15.4	18.8
White.....	34	15.6	3	59	18.5	3	14.5	16.2
Colored.....	23	28.0	2	125	18.3	2	17.9	25.7
New Bedford ⁷	22	10.2	4	115	14.4	6	13.5	13.4
New Haven.....	42	13.5	5	100	16.7	3	13.8	13.8
New Orleans ⁴	149	16.4	12	68	17.8	20	16.0	19.3
White.....	97	15.0	6	32	13.0	9	13.6	15.8
Colored.....	52	19.8	6	98	29.8	11	21.9	28.0
New York.....	1,607	11.6	128	57	11.9	130	12.0	13.5
Bronx Borough.....	210	7.9	14	40	8.5	9	8.9	9.7
Brooklyn Borough.....	540	10.5	35	39	10.9	62	11.2	12.6
Manhattan Borough.....	630	18.5	57	81	18.6	48	18.3	20.6
Queens Borough.....	186	8.0	20	83	7.5	9	7.7	8.7
Richmond Borough.....	41	12.8	2	39	11.8	2	14.9	14.4
Newark, N. J.....	97	11.3	6	33	13.9	5	12.1	13.8
Oakland.....	54	9.4	5	63	10.0	2	11.6	11.9
Oklahoma City.....	39	9.9	2	27	15.6	10	10.4	12.4
Omaha.....	53	12.7	4	45	12.3	6	15.2	14.6
Paterson.....	59	22.2	5	91	12.8	5	14.3	16.0
Peoria.....	21	9.9	1	28	13.0	2	12.6	14.0
Philadelphia.....	632	16.7	41	63	16.3	47	14.1	16.2
Pittsburgh.....	192	14.7	14	64	17.4	23	15.0	18.0
Portland, Oreg.....	62	10.4	1	13	10.2	5	12.5	12.8
Providence.....	78	15.9	9	87	13.7	3	15.7	15.3
Richmond ⁴	51	14.4	3	45	19.5	6	14.9	18.1
White.....	34	13.4	2	45	17.9	1	12.4	15.4
Colored.....	17	16.8	1	40	23.7	5	21.3	24.8
Rochester.....	66	15.0	6	57	13.7	9	12.8	14.0
St. Louis.....	272	17.1	15	84	16.4	21	15.0	18.4
St. Paul.....	59	11.0	7	75	10.2	2	11.2	11.8
Salt Lake City ⁴	24	8.6	1	16	18.8	0	11.6	13.0

See footnotes at end of table.

Deaths¹ from all causes in certain large cities of the United States during the week ended April 9, 1932, infant mortality, annual death rate, and comparison with corresponding week of 1931. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)—Continued

The rates furnished in this summary are based upon mid-year population estimates derived from the 1930 census]

City	Week ended Apr. 9, 1932				Corresponding week, 1931		Death rate ² for the first 14 weeks	
	Total deaths	Death rate ²	Deaths under 1 year	Infant mortality rate ³	Death rate ²	Deaths under 1 year mm	1932	1931
San Antonio.....	77	16.3	11		13.0	7	15.0	15.6
San Diego.....	40	12.8	2	43	13.3	4	16.4	15.6
San Francisco.....	163	12.9	9	62	14.4	9	13.8	14.5
Schenectady.....	25	13.5	2	58	14.1	6	11.6	12.3
Seattle.....	89	12.4	0	0	11.2	2	12.3	13.3
Somerville.....	26	12.8	0	0	8.4	0	10.6	11.2
South Bend.....	18	8.5	1	29	8.7	4	8.1	9.4
Spokane.....	23	10.3	1	27	10.8	2	12.8	13.1
Springfield, Mass.....	44	14.9	3	51	12.0	2	12.1	13.8
Syracuse.....	63	15.2	4	52	11.7	5	12.5	12.8
Tacoma.....	25	12.0	1	28	12.6	0	12.4	14.8
Tampa.....	33	16.0	2	57	12.9	1	12.8	14.8
White.....	23	14.1	0	0	12.0	0	12.3	13.5
Colored.....	10	22.9	2	317	16.4	1	14.4	19.0
Toledo.....	75	13.0	6	65	12.6	6	13.0	13.8
Trenton.....	58	24.4	5	90	18.5	8	18.0	19.5
Utica.....	49	24.9	2	57	18.9	0	16.7	16.9
Washington, D. C. ⁴	172	18.2	14	70	18.8	22	17.6	18.6
White.....	123	18.0	9	74	15.1	0	16.0	16.0
Colored.....	49	18.7	5	89	28.6	13	21.8	25.4
Waterbury.....	20	10.3	3	99	11.4	1	10.5	11.3
Wilmington, Del. ⁵	35	17.2	0	0	22.5	4	18.4	17.2
Worcester.....	49	12.9	5	70	15.9	7	13.6	16.2
Yonkers.....	49	18.0	4	103	9.4	5	8.6	10.4
Youngstown.....	35	10.4	1	16	10.6	4	11.2	11.8

¹ Deaths of nonresidents are included. Stillbirths are excluded.

² These rates represent annual rates per 1,000 population, as estimated for 1932 and 1931 by the arithmetical method.

³ Deaths under 1 year of age per 1,000 estimated live births. Cities left blank are not in the registration area for births.

⁴ Data for 80 cities.

⁵ Deaths for week ended Friday.

⁶ For the cities for which deaths are shown by color, the percentages of colored population in 1930 were as follows: Atlanta, 33; Baltimore, 18; Birmingham, 38; Dallas, 17; Fort Worth, 16; Houston, 27; Indianapolis, 12; Kansas City, Kans., 19; Knoxville, 16; Louisville, 15; Memphis, 38; Miami, 23; Nashville, 28; New Orleans, 29; Richmond, 29; Tampa, 21; and Washington, D. C., 27.

⁷ Population Apr. 1, 1930; decreased 1920 to 1930, no estimate made.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended April 16, 1932, and April 18, 1931

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Apr. 16, 1932, and Apr. 18, 1931

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Apr. 16, 1932	Week ended Apr. 18, 1931	Week ended Apr. 16, 1932	Week ended Apr. 18, 1931	Week ended Apr. 16, 1932	Week ended Apr. 18, 1931	Week ended Apr. 16, 1932	Week ended Apr. 18, 1931
New England States:								
Maine.....	2	4	22	5	208	9	0	0
New Hampshire.....	2				15	21	0	0
Vermont.....		1			30	1	0	0
Massachusetts.....	36	52	9	7	611	522	3	2
Rhode Island.....	3	6	3		161	46	0	0
Connecticut.....	8	7	17	5	186	671	1	2
Middle Atlantic States:								
New York.....	99	126	135	113	2,066	2,577	9	15
New Jersey.....	30	62	48	12	529	960	1	2
Pennsylvania.....	73	63			1,648	4,374	10	8
East North Central States:								
Ohio.....	64	39	103	43	2,818	673	9	1
Indiana.....	27	16	43	33	72	855	8	6
Illinois.....	80	138	69	13	967	1,586	11	20
Michigan.....	26	45	32	5	1,754	105	9	11
Wisconsin.....	10	17	113	49	1,672	790	1	1
West North Central States:								
Minnesota.....	8	5	5		38	71	2	1
Iowa.....	6	6			2	56	0	1
Missouri.....	25	30	15	22	47	620	1	8
North Dakota.....	2	1			60	77	0	0
South Dakota.....	1	11			14	119	1	0
Nebraska.....		6	13		1	5	1	2
Kansas.....	9	13	6	16	460	48	3	1
South Atlantic States:								
Delaware.....	1	1	1	1	1	265	0	0
Maryland.....	14	14	152	23	40	1,612	2	4
District of Columbia.....	5	18	2	4	2	287	0	3
Virginia.....							2	
West Virginia.....	11	13	278	40	314	90	3	0
North Carolina.....	12	30	88	17	710	940	1	3
South Carolina.....	8	7	1,871	702	127	138	0	2
Georgia.....	12	7	188	215	34	123	0	0
Florida.....	3	7	6	14	6	200	0	1
East South Central States:								
Kentucky.....	8		330		72	341	3	5
Tennessee.....	10	4	1,040	96	104	91	3	2
Alabama.....	12	23	187	346	45	367	3	10
Mississippi.....	8	3					3	6

See footnotes at end of table.

*Cases of certain communicable diseases reported by telegraph by State health officers
for weeks ended Apr. 16, 1932, and Apr. 18, 1931—Continued*

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Apr. 16, 1932	Week ended Apr. 18, 1931	Week ended Apr. 16, 1932	Week ended Apr. 18, 1931	Week ended Apr. 16, 1932	Week ended Apr. 18, 1931	Week ended Apr. 16, 1932	Week ended Apr. 18, 1931
West South Central States:								
Arkansas.....	5	6	71	207	2	32	0	2
Louisiana.....	31	14	13	33	103	3	0	1
Oklahoma.....	12	19	152	143	43	23	0	5
Texas.....	21	36	133	69	328	57	1	0
Mountain States:								
Montana.....	2	2	2		166	8	0	1
Idaho.....	1	1	3	2			0	0
Wyoming.....		1	2		6	4	0	0
Colorado.....	3	7			166	274	1	2
New Mexico.....	11	2	54	2	89	28	1	1
Arizona.....		1	18	43	3	36	0	1
Utah.....	5	1		14	1	5	0	2
Pacific States:								
Washington.....	9	10	3	48	341	55	1	1
Oregon.....	2	5	65	55	250	150	0	0
California.....	80	49	88	77	627	1,461	0	3
Total.....	797	929	5,340	2,374	16,908	20,734	94	147

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Apr. 16, 1932	Week ended Apr. 18, 1931	Week ended Apr. 16, 1932	Week ended Apr. 18, 1931	Week ended Apr. 16, 1932	Week ended Apr. 18, 1931	Week ended Apr. 16, 1932	Week ended Apr. 18, 1931
New England States:								
Maine.....	0	1	41	5	0	0	0	0
New Hampshire.....	1	0	30	1	0	0	0	0
Vermont.....	0	0	9	2	4	0	0	0
Massachusetts.....	3	1	585	374	0	0	3	2
Rhode Island.....	0	0	68	57	0	0	0	0
Connecticut.....	0	0	93	41	0	0	3	0
Middle Atlantic States:								
New York.....	1	2	1,662	897	12	4	2	11
New Jersey.....	0	0	316	340	0	0	1	3
Pennsylvania.....	3	1	881	483	0	1	14	14
East North Central States:								
Ohio.....	1	1	490	380	17	83	7	3
Indiana.....	0	1	101	276	18	109	1	0
Illinois.....	3	1	399	553	9	58	17	7
Michigan.....	1	3	415	333	6	14	4	10
Wisconsin.....	0	1	82	216	1	29	1	1
West North Central States:								
Minnesota.....	0	0	133	92	0	3	0	1
Iowa.....	0	0	66	78	44	81	5	0
Missouri.....	0	0	85	283	4	56	1	2
North Dakota.....	1	0	23	25	9	12	2	5
South Dakota.....	0	1	3	23	1	14	3	0
Nebraska.....	0	0	24	28	3	21	0	1
Kansas.....	0	0	46	50	5	93	4	1
South Atlantic States:								
Delaware.....	0	0	17	34	0	0	0	0
Maryland.....	0	1	134	65	0	0	4	3
District of Columbia.....	0	0	21	27	0	0	0	0
Virginia.....								
West Virginia.....	0	1	24	50	0	4	2	4
North Carolina.....	1	0	48	50	4	0	5	1
South Carolina.....	0	1	8	8	0	4	7	7
Georgia.....	0	0	5	71	2	0	9	1
Florida.....	0	1	1	5	0	0	2	4

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Apr. 16, 1932, and Apr. 18, 1931—Continued

Division and State	Polio-myelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Apr. 16, 1932	Week ended Apr. 18, 1931	Week ended Apr. 16, 1932	Week ended Apr. 18, 1931	Week ended Apr. 16, 1932	Week ended Apr. 18, 1931	Week ended Apr. 16, 1932	Week ended Apr. 18, 1931
East South Central States:								
Kentucky.....	0	0	32	87	16	2	4	2
Tennessee.....	0	0	32	19	10	8	7	11
Alabama ¹	1	0	13	38	15	25	8	6
Mississippi.....	0	0	9	18	19	66	3	3
West South Central States:								
Arkansas.....	0	2	7	20	25	33	1	3
Louisiana.....	1	0	9	14	3	33	12	6
Oklahoma ¹	0	0	6	31	16	152	2	1
Texas ¹	1	0	27	41	29	37	5	6
Mountain States:								
Montana.....	0	0	20	36	1	3	3	1
Idaho.....	0	0	1	4	1	2	0	1
Wyoming.....	0	0	11	16	3	7	0	9
Colorado.....	0	0	35	40	0	2	0	9
New Mexico.....	0	1	10	7	0	4	3	3
Arizona.....	0	0	7	4	0	3	0	0
Utah ¹	0	0	5	9	0	0	0	0
Pacific States:								
Washington.....	0	0	37	41	86	0	1	1
Oregon.....	0	0	12	19	28	20	4	1
California.....	3	4	168	155	22	53	7	9
	21	24	6,310	5,455	413	1,036	157	137

¹ New York City only.

² Week ended Friday.

³ Typhus fever, week ended Apr. 16, 1932, 8 cases: 1 case in South Carolina, 2 cases in Georgia, 4 cases in Alabama, and 1 case in Texas.

⁴ Figures for 1932 are exclusive of Oklahoma City and Tulsa, and for 1931 are exclusive of Tulsa only.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week.

State	Men-ingo-cocci menin-gitis	Diph-theria	Influ-enza	Ma-laria	Mea-sles	Pe-l-legra	Polio-my-e-litis	Scarlet fever	Small-pox	Ty-phoid fever
February, 1932										
Arkansas.....	1	48	274	19	13	8	0	93	93	12
New Hampshire.....		6						151		2
March, 1932										
Indiana.....	42	160	880		241		1	594	40	11
Maine.....	2	13	267		1,403		0	100	0	1
Massachusetts.....	9	176	91	1	2,418	2	3	2,335	0	9
New Jersey.....	6	152	864		1,219		4	1,459	0	11
North Dakota.....	5	8	509		201		0	74	12	
Pennsylvania.....	22	566			9,524		2	3,707	7	44
Vermont.....		5			495		0	65	22	1
Wyoming.....	6	3	2		18		0	34	5	6

February, 1933		Mumps—Continued.		Cases
Arkansas:	Cases	Vermont.....		331
Chicken pox.....	97	Wyoming.....		93
Mumps.....	39	Ophthalmia neonatorum:		
Trachoma.....	9	Massachusetts.....		65
Tularaemia.....	2	New Jersey.....		1
Whooping cough.....	67	Pennsylvania.....		13
March, 1933		Paratyphoid fever:		
Actinomycosis:		Maine.....		1
Pennsylvania.....	1	Puerperal fever:		
Anthrax:		Pennsylvania.....		23
New Jersey.....	1	Rabies in man:		
Chicken pox:		Pennsylvania.....		1
Indiana.....	357	Septic sore throat:		
Maine.....	110	Maine.....		1
Massachusetts.....	1,020	Massachusetts.....		31
New Jersey.....	1,256	Wyoming.....		1
North Dakota.....	38	Tetanus:		
Pennsylvania.....	3,916	New Jersey.....		1
Vermont.....	112	Pennsylvania.....		2
Wyoming.....	15	Trachoma:		
Conjunctivitis:		Indiana.....		3
Maine.....	1	Massachusetts.....		5
Wyoming.....	30	New Jersey.....		1
Dysentery:		Pennsylvania.....		2
Massachusetts.....	1	Trichinosis:		
German measles:		North Dakota.....		11
Maine.....	269	Pennsylvania.....		1
Massachusetts.....	77	Undulant fever:		
New Jersey.....	54	Indiana.....		1
Pennsylvania.....	222	Maine.....		1
Lead poisoning:		Massachusetts.....		2
Massachusetts.....	4	Pennsylvania.....		1
Lethargic encephalitis:		Vincent's angina:		
Indiana.....	1	Indiana.....		3
Massachusetts.....	2	Maine.....		3
New Jersey.....	4	North Dakota.....		11
Pennsylvania.....	6	Whooping cough:		
Mumps:		Indiana.....		462
Indiana.....	437	Maine.....		121
Maine.....	46	Massachusetts.....		1,062
Massachusetts.....	1,411	New Jersey.....		1,259
New Jersey.....	846	North Dakota.....		21
North Dakota.....	65	Pennsylvania.....		3,583
Pennsylvania.....	3,993	Vermont.....		150
		Wyoming.....		6

Cases of Certain Communicable Diseases Reported for the Month of February, 1932, by State Health Officers

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Small-pox	Tuberculosis	Typhoid and paratyphoid fever	Whooping cough
Maine.....	164	18	2,338	77	106	0	35	5	143
New Hampshire.....		6			151			2	
Vermont.....	168		526	267	61	78	11	7	199
Massachusetts.....	919	226	1,566	1,168	2,070	5	433	13	553
Rhode Island.....	104	22	3,783	161	212	0	48	0	64
Connecticut.....	523	26	971	333	413	26	114	8	482
New York.....	2,763	597	7,553	1,503	5,600	11	1,616	43	2,723
New Jersey.....	1,409	185	576	448	1,062	0	359	9	1,700
Pennsylvania.....	4,240	570	7,509	3,363	3,066	0	655	75	3,967
Ohio.....	1,813	272	2,866	1,126	1,817	188	664	29	2,512
Indiana.....	542	357	408	377	541	70	190	14	471
Illinois.....	1,618	425	700	319	1,778	26	890	34	1,627
Michigan.....	1,412	193	1,803	1,378	1,939	11	541	30	1,167
Wisconsin.....	1,463	76	988	1,342	449	27	156	3	880
Minnesota.....	234	46	153		543	8	209	12	74
Iowa.....	196	50	24	75	223	141	28	4	97

Cases of Certain Communicable Diseases Reported for the Month of February, 1932, by State Health Officers—Continued

State	Chicken pox	Diph- theria	Measles	Mumps	Scarlet fever	Small- pox	Tuber- culosis	Typhoid and para- typhoid fever	Whoop- ing cough
Missouri.....	479	161	116	84	373	67	150	11	845
North Dakota.....	88	20	257	124	93	34	9	2	10
South Dakota.....	39	20	243	68	50	47	7	5	21
Nebraska.....	150	32	147	132	138	38	10	2	94
Kansas.....	671	81	520	440	245	10	203	7	275
Delaware.....	44	12	3	53	53	0	12	4	54
Maryland.....	643	130	111	552	511	0	1167	20	836
District of Columbia.....	150	61	11	—	95	0	95	2	83
Virginia.....	543	228	310	—	300	0	124	49	1,671
West Virginia.....	184	85	1,738	86	189	3	78	24	312
North Carolina.....	612	112	1,130	—	207	16	—	21	1,836
South Carolina.....	175	123	204	277	31	1	88	28	142
Georgia.....	99	43	24	73	59	—	136	44	85
Florida.....	12	60	22	15	25	1	35	28	35
Kentucky.....	—	—	—	—	—	—	—	—	—
Tennessee.....	163	115	213	127	173	67	149	35	804
Alabama.....	150	114	8	101	89	11	319	40	93
Mississippi.....	628	71	24	179	43	119	116	32	700
Arkansas.....	97	46	13	30	63	63	11	12	67
Louisiana.....	23	117	140	5	73	22	106	67	40
Oklahoma.....	64	101	72	48	125	42	92	14	86
Texas.....	—	242	—	—	266	—	—	27	—
Montana.....	78	8	295	21	183	8	32	3	80
Idaho.....	32	9	6	39	38	9	19	16	9
Wyoming.....	27	—	5	58	27	0	—	—	—
Colorado.....	355	36	202	251	139	6	31	2	87
New Mexico.....	100	100	261	30	52	9	64	13	92
Arizona.....	163	18	4	11	22	1	95	—	46
Utah.....	—	—	—	—	—	—	—	—	—
Nevada.....	—	—	—	—	12	0	12	—	2
Washington.....	359	15	2,425	97	161	76	113	3	141
Oregon.....	167	15	383	107	82	44	35	8	52
California.....	3,283	278	1,642	562	584	50	926	27	701

Case Rates per 100,000 Population (Annual Basis) for the Month of February, 1932

State	Chicken pox	Diph- theria	Measles	Mumps	Scarlet fever	Small- pox	Tuber- culosis	Typhoid and para- typhoid fever	Whoop- ing cough
Maine.....	228	28	3,679	121	170	0	55	8	225
New Hampshire.....	—	16	—	—	407	0	—	5	—
Vermont.....	589	—	1,844	939	214	273	39	25	352
Massachusetts.....	270	66	460	343	607	1	118	4	250
Rhode Island.....	188	40	6,849	291	383	0	87	0	116
Connecticut.....	403	20	749	257	319	20	88	6	372
New York.....	271	59	741	147	849	1	158	4	267
New Jersey.....	428	56	175	136	323	0	109	2	516
Pennsylvania.....	549	74	972	435	357	0	85	10	516
Ohio.....	338	61	633	210	339	35	124	6	469
Indiana.....	209	91	187	145	308	29	75	5	181
Illinois.....	263	69	115	52	289	4	131	6	248
Michigan.....	357	49	456	348	490	3	187	8	256
Wisconsin.....	620	32	419	569	190	11	66	1	373
Minnesota.....	114	22	89	—	265	4	102	0	36
Iowa.....	100	25	12	38	114	72	14	2	49
Missouri.....	165	56	40	29	129	23	52	4	262
North Dakota.....	162	37	474	229	172	63	17	9	18
South Dakota.....	70	36	438	123	90	85	13	9	38
Nebraska.....	136	29	134	130	125	35	9	2	85
Kansas.....	380	54	347	203	163	7	135	5	153
Delaware.....	230	63	16	278	278	0	63	21	283
Maryland.....	491	99	85	421	390	0	127	15	640
District of Columbia.....	383	166	28	—	243	0	243	8	212
Virginia.....	281	118	161	—	155	0	64	26	866
West Virginia.....	132	61	1,245	62	135	2	56	17	223
North Carolina.....	238	44	442	—	80	6	—	8	547

¹ Pulmonary.

² Reports received weekly.

³ Exclusive of Oklahoma City and Tulsa.

**Case Rates per 100,000 Population (Annual Basis) for the Month of February
1932—Continued**

State	Chicken pox	Diph- theria	Measles	Mumps	Scarlet fever	Small- pox	Tuber- culosis	Typhoid and para- typhoid fever	Whoop- ing cough
South Carolina.....	126	89	147	200	22	1	64	20	103
Georgia.....	43	19	10	32	26		59	19	37
Florida.....	10	49	18	12	21	1	29	23	29
Kentucky ¹									
Tennessee.....	78	55	101	60	82	32	71	17	145
Alabama.....	71	54	4	47	42	5	150	19	44
Mississippi.....	389	44	15	111	27	74	72	20	434
Arkansas.....	66	32	9	26	63	63	17	8	45
Louisiana.....	14	69	83	3	43	13	62	39	24
Oklahoma ¹	33	61	44	29	76	25	56	8	32
Texas.....		51			56			6	
Montana.....	171	19	693	49	430	12	75	7	117
Idaho.....	90	25	17	110	107	23	25	45	25
Wyoming.....	148		27	318	148	0			
Colorado.....	428	43	243	302	167	7	37	4	106
New Mexico.....	253	253	764	88	152	26	187	38	269
Arizona.....	459	51	11	31	62	3	268		130
Utah ¹									
Nevada.....	68	14	27		163	0	27		27
Washington.....	285	12	1,025	77	128	60	90	2	112
Oregon.....	216	19	495	138	106	57	45	10	67
California.....	695	59	347	119	124	11	195	6	148

¹ Pulmonary.² Reports received weekly.³ Exclusive of Oklahoma City and Tulsa.

RECIPROCAL NOTIFICATIONS

*Notifications regarding communicable diseases sent during the month of March,
1932, by departments of health of States named to other State health departments*

Disease	California	Connect- icut	Illinois	Mas- sachu- setts	Minne- sota	New York
Chicken pox.....		1				
Diphtheria.....					1	1
Dysentery.....						1
Measles.....						2
Meningitis.....					1	1
Pneumonia.....				1		
Septic sore throat.....				3		1
Scarlet fever.....		2		3		1
Tuberculosis.....	8		7		22	1

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 98 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 34,050,000. The estimated population of the 91 cities reporting deaths is more than 32,490,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended April 9, 1932, and April 11, 1931

	1932	1931	Estimated expectancy
<i>Cases reported</i>			
Diphtheria:			
46 States.....	799	598	
98 cities.....	333	419	733
Measles:			
45 States.....	13,701	20,884	
98 cities.....	5,598	8,516	
Meningococcus meningitis:			
46 States.....	65	168	
98 cities.....	34	85	
Poliomyelitis:			
46 States.....	20	20	
Scarlet fever:			
46 States.....	5,676	5,545	
98 cities.....	2,758	2,322	1,556
Smallpox:			
46 States.....	392	1,051	
98 cities.....	40	125	63
Typhoid fever:			
46 States.....	157	124	
98 cities.....	21	32	28
<i>Deaths reported</i>			
Influenza and pneumonia:			
91 cities.....	1,068	1,064	
Smallpox:			
91 cities.....	0	1	
New Orleans, La.....	0	1	

City reports for week ended April 9, 1932

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding weeks of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded, and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years.

If the reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1923 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviation from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND								
Maine:								
Portland.....	2	0	0	1	0	40	1	
New Hampshire:								
Concord.....	0	0	0		0	4	0	
Manchester.....	0	0	0		0	0	0	
Nashua.....	0	0	0		0	0	0	
Vermont:								
Barre.....	0	0	0		0	0	0	
Burlington.....	1	0	2		0	0	1	
Massachusetts:								
Boston.....	69	27	20		0	64	74	45
Fall River.....	4	3	1	1	0	80	7	
Springfield.....	28	2	1		0	31	14	
Worcester.....	14	3	0		0	0	35	
Rhode Island:								
Pawtucket.....	0	0	0		0	0	0	
Providence.....	4	7	3		2	61	2	10
Connecticut:								
Bridgeport.....	1	4	0	1	0	5	0	
Hartford.....	7	3	1		0	2	7	
New Haven.....	13	1	0	1	0	4	23	
MIDDLE ATLANTIC								
New York:								
Buffalo.....	39	9	2		2	13	1	34
New York.....	263	214	96	60	28	242	203	221
Rochester.....	7	5	1	2	0	148	15	7
Syracuse.....	9	3	0		0	430	6	
New Jersey:								
Camden.....	10	6	1	3	0	1	0	
Newark.....	49	14	5	4	2	39	143	11
Trenton.....	3	2	0	1	2	1	3	9
Pennsylvania:								
Philadelphia.....	139	58	6	24	12	14	76	96
Pittsburgh.....	45	14	5	4	4	349	43	26
Reading.....	32	1	1		1	1	1	5
Scranton.....	8		0		0	1	0	
EAST NORTH CENTRAL								
Ohio:								
Cincinnati.....	3	7	3	1	4	0	2	16
Cleveland.....	82	22	8	67	15	838	65	24
Columbus.....	2	2	2	1	1	6	5	3
Toledo.....	10	3	0	2	2	25	0	10
Indiana:								
Fort Wayne.....	1	2	4		1	1	0	0
Indianapolis.....	22	3	1		1	8	156	9
South Bend.....	4	0	0		0	4	0	0
Terre Haute.....	7	0	0		0	1	0	4
Illinois:								
Chicago.....	105	89	35	7	4	430	14	35
Springfield.....	8	1	1	1	0	0	5	

City reports for week ended April 9, 1932—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—Continued								
Michigan:								
Detroit	108	38	22	12	5	330	60	23
Flint	10	2	0	18	2	255	59	5
Grand Rapids	9	0	0		2	140	21	0
Wisconsin:								
Kenosha	0	0	0		0	2	0	0
Madison	10	0	0			0	0	
Milwaukee	179	11	1	1	1	563	28	6
Racine	30	1	0		0	207	48	1
Superior	4	0	0		1	0	30	1
WEST NORTH CENTRAL								
Minnesota:								
Duluth	4	0	0		1	1	0	1
Minneapolis	16	10	0		0	7	20	7
St. Paul	1	4	1	1	1	9	9	4
Iowa:								
Davenport	1	0	0			0	2	
Des Moines	0	1	3			0	0	
Sioux City	3	1	0			0	2	
Waterloo	7	0	0			1	0	
Missouri:								
Kansas City	25	3	3		0	1	3	20
St. Joseph	0	1	3		1	0	0	6
St. Louis	29	31	6	5	5	4	6	10
North Dakota:								
Fargo	2	0	0		0	37	0	0
Grand Forks	0	0	0			0	0	
South Dakota:								
Aberdeen	2	0	0			8	0	
Sioux Falls	0	0	0			1	0	
Nebraska:								
Omaha	8	2	1		0	0	3	13
Kansas:								
Topeka	22	1	0	2	0	2	10	1
Wichita	12	1	0		0	143	2	3
SOUTH ATLANTIC								
Delaware:								
Wilmington	2	2	0		0	0	3	8
Maryland:								
Baltimore	130	10	4	22	6	2	110	23
Cumberland	0	0	0	2	0	8	0	1
Frederick	0	0	1	1	0	0	0	1
District of Columbia:								
Washington	38	11	4	3	3	9	0	17
Virginia:								
Lynchburg	18	0	1		4	2	2	4
Norfolk	12	0	0	1	0	0	0	9
Richmond	2	2	0		3	0	0	6
Roanoke	1	1	0		5	0	0	1
West Virginia:								
Charleston	1	0	0	2	1	75	0	0
Huntington	0		3		0	4	0	0
Wheeling	0	0	0		0	6	0	2
North Carolina:								
Raleigh	1	1	1		0	10	0	1
Wilmington	0	0	0		0	0	0	0
Winston-Salem	9	0	0		1	1	11	0
South Carolina:								
Charleston	2	0	0	121	1	0	0	9
Columbia	3	0	1		1	60	0	8
Greenville	1	0	0		0	2	0	0
Georgia:								
Atlanta	6	3	3	11	2	2	0	8
Brunswick	5	0	0		0	0	0	0
Savannah	12	1	1	18	2	0	0	0
Florida:								
Miami	7	2	1		0	0	0	1
Tampa	28	1	3	2	2	0	0	3

City reports for week ended April 9, 1932—Continued

Division, State, and city	Chick- en pox, cases re- ported	Diphtheria		Influenza		Meas- les, cases re- ported	Mumps, cases re- ported	Pneu- monia, deaths re- ported
		Cases, esti- mated expect- ancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL								
Kentucky:								
Covington.....	0	0	0		0	0	0	3
Tennessee:								
Memphis.....	7	2	1		8		0	14
Nashville.....	0	1	0		3	1	0	7
Alabama:								
Birmingham.....	10	1	2	20	1	3	4	8
Mobile.....	0	0	2		0	0	1	0
Montgomery.....	10	0	2	1		0	9	
WEST SOUTH CENTRAL								
Arkansas:								
Fort Smith.....	0	0	1			0	0	
Little Rock.....	1	0	0		0	0	5	7
Louisiana:								
New Orleans.....	0	11	14	3	2	2	0	15
Shreveport.....	2	0	0		0	8	7	7
Oklahoma:								
Oklahoma City.....	0	1	2		2	12	8	5
Tulsa.....	5	1	0			7	0	
Texas:								
Dallas.....	8	5	3	2	2		1	4
Fort Worth.....	18	1	0		0	0	0	2
Galveston.....	0	0	1		0	0	0	5
Houston.....	1	4	8		4	5	0	15
San Antonio.....	1	3	1		4	0	0	8
MOUNTAIN								
Montana:								
Billings.....	0	1	0		0	0	0	0
Great Falls.....	7	0	0		1	0	0	2
Helena.....	0	0	1		0	13	0	0
Missoula.....	0	0	0		0	0	0	0
Idaho:								
Boise.....	0	0	0		0	0	1	0
Colorado:								
Denver.....	27	7	3		3	100	33	11
Pueblo.....	25	0	0		0	0	1	1
New Mexico:								
Albuquerque.....	2	0	0		0	49	5	2
Utah:								
Salt Lake City.....	32	2	2		0	1	1	0
Nevada:								
Reno.....	0	0	0		0	0	0	1
PACIFIC								
Washington:								
Seattle.....	19	2	1			387	5	
Spokane.....	5	0	0			0	0	
Tacoma.....	0	1	2		0	25	1	2
Oregon:								
Portland.....	13	7	2	2	2	189	12	4
Salem.....	10	0	0	2	0	1	8	0
California:								
Los Angeles.....	174	31	32	40	0	9	14	17
Sacramento.....	41	3	1		0	51	2	6
San Francisco.....	86	11	1	2	0	217	7	6

City reports for week ended April 9, 1932—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
NEW ENGLAND											
Maine:											
Portland	3	4	0	0	0	1	0	0	0	23	27
New Hampshire:											
Concord	0	3	0	0	0	0	0	0	0	0	10
Manchester	2	0	0	0	0	2	0	0	0	0	18
Nashua	1	0	0	0	0	0	0	0	0	0	
Vermont:											
Barre	0	0	0	0	0	1	0	0	0	1	5
Burlington	0	0	0	0	0	0	0	0	0	0	9
Massachusetts:											
Boston	91	186	0	0	0	16	1	0	0	35	244
Fall River	5	11	0	0	0	2	0	0	0	5	35
Springfield	12	6	0	0	0	5	0	0	0	7	44
Worcester	10	42	0	0	0	5	0	0	0	17	49
Rhode Island:											
Pawtucket	3	0	0	0	0	0	0	0	0	0	18
Providence	14	38	0	0	0	6	0	0	0	3	78
Connecticut:											
Bridgeport	12	3	0	0	0	0	0	0	0	6	34
Hartford	6	12	0	0	0	4	0	0	0	14	53
New Haven	6	18	0	0	0	0	0	1	0	15	42
MIDDLE ATLANTIC											
New York:											
Buffalo	28	89	1	0	0	13	0	0	0	19	184
New York	330	826	0	0	0	85	9	1	1	213	1,667
Rochester	11	71	0	0	0	2	0	0	0	7	92
Syracuse	12	29	0	0	0	2	0	0	0	32	63
New Jersey:											
Camden	6	28	0	0	0	1	0	0	0	4	48
Newark	36	32	0	0	0	2	1	0	0	43	89
Trenton	3	5	0	0	0	3	0	0	0	2	58
Pennsylvania:											
Philadelphia	105	260	0	0	0	28	2	1	0	179	632
Pittsburgh	31	48	0	0	0	9	0	0	0	42	192
Reading	5	26	0	0	0	1	0	0	0	22	40
Scranton		23		0				0		1	
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	25	44	1	0	0	13	0	0	0	8	147
Cleveland	40	95	0	0	0	15	0	0	0	160	242
Columbus	12	5	1	4	0	5	0	0	0	36	102
Toledo	15	4	0	0	0	2	0	0	0	95	75
Indiana:											
Fort Wayne	5	2	3	0	0	1	0	0	0	6	31
Indianapolis	13	10	8	0	0	5	0	0	0	43	
South Bend	4	2	0	0	0	3	0	0	0	7	18
Terre Haute	2	1	0	0	0	1	0	0	0	1	19
Illinois:											
Chicago	194	214	1	0	0	42	1	0	1	152	692
Springfield	4	3	0	2	0	1	0	1	0	8	28
Michigan:											
Detroit	119	187	1	0	0	21	1	1	0	197	270
Flint	14	6	2	0	0	0	0	0	0	30	32
Grand Rapids	12	7	0	0	0	1	1	0	0	3	24
Wisconsin:											
Kenosha	1	2	0	0	0	0	0	1	0	4	3
Madison	4	1	1	0				0		14	
Milwaukee	29	24	0	0	0	3	1	0	0	132	100
Racine	3	1	0	0	0	2	0	0	0	0	19
Superior	4	1	0	0	0	2	0	0	0	0	10

City reports for week ended April 9, 1932—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths reported	Typhoid fever			Whoop- ing cough, cases re-ported	Deaths, all causes
	Cases, esti- mated expec- tancy	Cases re- ported	Cases, esti- mated expec- tancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expec- tancy	Cases re- ported	Deaths re- ported		
WEST NORTH CENTRAL											
Minnesota:											
Duluth	8	3	0	0	0	0	0	0	0	0	20
Minneapolis	36	51	0	0	0	2	0	0	0	32	99
St. Paul	30	15	0	0	0	2	0	0	0	9	65
Iowa:											
Davenport	2	4	2	0			0	0		0	
Des Moines	9	9	3	0			0	0		0	38
Sioux City	2	5	1	4			0	0		3	
Waterloo	2	0	1	0			1	0		3	
Missouri:											
Kansas City	25	20	1	0	0	9	0	0	0	23	110
St. Joseph	4	1	0	0	0	1	0	0	0	0	14
St. Louis	57	16	3	0	0	13	1	0	0	46	272
North Dakota:											
Fargo	1	3	0	0	0	1	0	0	0	0	3
Grand Forks	1	0	0	0				0		0	
South Dakota:											
Aberdeen	0	0	1	2			0	0		0	
Sioux Falls	3	1	1	0			0	0		0	9
Nebraska:											
Omaha	4	5	4	1	0	1	0	0	0	2	53
Kansas:											
Topeka	4	0	1	0	0	0	0	0	0	35	8
Wichita	5	0	4	0	0	2	0	0	0	1	25
SOUTH ATLANTIC											
Delaware:											
Wilmington	6	5	0	0	0	2	0	0	0	7	35
Maryland:											
Baltimore	40	87	0	0	0	17	2	4	0	152	226
Cumberland	0	1	0	0	0	0	0	0	0	0	10
Frederick	0	1	0	0	0	0	0	0	0	0	2
District of Col.:											
Washington	25	23	0	0	0	8	0	0	0	23	172
Virginia:											
Lynchburg	0	3	0	0	0	0	0	0	0	26	16
Norfolk	1	1	0	0	0	4	0	0	0	3	34
Richmond	4	6	0	0	0	2	0	0	0	2	55
Roanoke	1	6	1	0	0	0	0	0	0	1	19
West Virginia:											
Charleston	1	0	0	0	0	1	0	0	0	7	12
Huntington		8		0	0	0	0	0	0	0	
Wheeling	2	2	0	0	0	0	0	1	1	18	9
North Carolina:											
Raleigh	0	0	1	0	0	1	0	0	0	1	3
Wilmington	0	0	0	0	0	0	0	0	0	11	9
Winston-Salem	1	23	0	0	0	0	0	0	0	35	18
South Carolina:											
Charleston	0	0	0	0	0	0	0	0	0	0	36
Columbia	0	0	0	4	0	10	0	0	1	3	70
Greenville		1	0	0	0	0		0	0	0	
Georgia:											
Atlanta	6	5	2	0	0	5	0	0	0	8	96
Brunswick	0	0	0	0	0	0	0	0	0	0	0
Savannah	0	0	0	0	0	2	0	2	1	2	33
Florida:											
Miami	0	1	0	0	0	6	1	0	0	2	29
Tampa	0	0	0	0	0	3	1	1	1	0	34
EAST SOUTH CENTRAL											
Kentucky:											
Covington	3	0	0	0	0	2	0	0	0	0	28
Tennessee:											
Memphis	12	10	2	4	0	5	0	0	0	27	86
Nashville	3	4	1	0	0	4	0	0	0	24	57
Alabama:											
Birmingham	3	0	0	0	0	3	0	2	0	19	59
Mobile	1	0	0	5	0	0	0	2	0	0	15
Montgomery	0	1	0	0			0	0		0	

City reports for week ended April 9, 1932—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culo- sis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith.....	1	0	0	0			0	0		1	
Little Rock.....	2	0	0	0	0	1	0	0	0	0	8
Louisiana:											
New Orleans.....	11	11	0	1	0	15	2	0	0	1	149
Shreveport.....	0	1	0	0	0	3	0	0	0	3	39
Oklahoma:											
Oklahoma City.....	4	5	3	1	0	2	0	0	0	0	39
Tulsa.....	3	0	1	5			0	0		1	
Texas:											
Dallas.....	5	0	1	0	0	4	0	0	0	12	64
Fort Worth.....	3	3	6	8	0	0	0	1	0	0	24
Galveston.....	0	0	0	0	0	1	0	0	0	0	14
Houston.....	3	3	2	0	0	2	1	0	0	0	68
San Antonio.....	2	1	0	2	0	9	0	0	0	0	77
MOUNTAIN											
Montana:											
Billings.....	1	0	0	0	0	0	0	0	0	0	7
Great Falls.....	2	0	0	0	0	0	0	0	0	0	13
Helena.....	0	0	0	0	0	0	0	0	0	0	9
Missoula.....	0	2	0	0	0	0	0	0	0	0	0
Idaho:											
Boise.....	0	0	0	1	0	0	0	0	0	0	6
Colorado:											
Denver.....	13	19	0	0	0	5	0	0	0	53	85
Pueblo.....	0	1	0	0	0	0	0	0	0	6	8
New Mexico:											
Albuquerque.....	1	4	0	0	0	3	0	0	0	0	15
Utah:											
Salt Lake City.....	2	7	1	0	0	0	0	0	0	4	24
Nevada:											
Reno.....	0	0	0	0	0	0	0	0	0	0	3
PACIFIC											
Washington:											
Seattle.....	8	10	2	0	0		0	0		5	
Spokane.....	6	1	8	0	0		0	0		0	
Tacoma.....	2	2	4	5	0	0	0	0	0	1	25
Oregon:											
Portland.....	4	1	9	5	0	0	0	0	0	16	62
Salem.....	1	1	1	0	0	0	0	0	0	3	
California:											
Los Angeles.....	37	58	4	5	0	17	1	0	0	31	239
Sacramento.....	3	2	0	0	0	0	1	1	0	5	29
San Francisco.....	22	3	1	2	0	6	1	2	0	14	163

City reports for week ended April 9, 1932—Continued

Division, State, and city	Meningo- coccus meningitis		Lethargic en- cephalitis		Pellagra		Poliomyelitis (Infan- tile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, esti- mated expect- ancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Fall River.....	1	1	0	0	0	0	0	0	0
Connecticut:									
Hartford.....	0	0	0	1	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
New York.....	5	3	2	0	0	0	1	1	0
Pennsylvania:									
Philadelphia.....	5	1	1	2	0	0	0	1	0
Pittsburgh.....	3	2	0	0	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cleveland.....	2	1	0	0	0	0	0	0	0
Indiana:									
Fort Wayne.....	1	1	0	0	0	0	0	0	0
Indianapolis.....	4	5	0	0	0	0	0	0	0
Illinois:									
Chicago.....	0	1	1	1	0	0	0	0	0
Michigan:									
Detroit.....	2	0	1	1	0	0	0	0	0
Wisconsin:									
Milwaukee.....	1	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Missouri:									
St. Louis.....	1	0	1	1	0	0	0	0	0
Kansas:									
Wichita.....	1	1	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore.....	1	0	0	0	0	0	0	0	0
District of Columbia:									
Washington.....	2	0	0	0	0	0	0	1	0
North Carolina:									
Wilmington.....	0	0	0	0	1	0	0	0	0
Winston-Salem.....	0	0	0	0	1	0	0	0	0
South Carolina:									
Charleston.....	0	0	0	0	2	0	0	0	0
Columbia.....	0	1	0	0	0	3	0	0	0
Georgia:									
Atlanta.....	1	1	0	0	0	0	0	0	0
Savannah ¹	0	0	0	0	3	3	0	0	0
EAST SOUTH CENTRAL¹									
Kentucky:									
Covington.....	0	0	0	1	0	0	0	0	0
Tennessee:									
Memphis.....	1	1	0	0	0	0	0	0	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans.....	1	1	0	0	0	0	0	0	0
Texas:									
Fort Worth.....	0	0	0	0	0	1	0	0	0
Houston.....	1	0	0	0	0	0	0	0	0
San Antonio ¹	0	1	0	0	0	0	0	0	0
PACIFIC									
California:									
Los Angeles ²	1	1	0	0	0	0	0	0	0
San Francisco.....	1	1	0	0	0	0	0	0	0

¹ Typhus fever, 3 cases: 1 case in Savannah, Ga.; 1 case in Mobile, Ala.; and 1 case in San Antonio, Tex.
² Dengue, 1 case in Los Angeles, Calif.

The following table gives the rates per 100,000 population for 98 cities for the 5-week period ended April 9, 1932, compared with those for a like period ended April 11, 1931. The population figures used in computing the rates are estimated mid-year populations for 1931 and 1932, respectively, derived from the 1930 census. The 98 cities reporting cases have an estimated aggregate population of more than 34,000,000. The 91 cities reporting deaths have more than 32,400,000 estimated population.

Summary of weekly reports from cities, March 6 to April 9, 1932—Annual rates per 100,000 population, compared with rates for the corresponding period of 1931¹

DIPHTHERIA CASE RATES

	Week ended—									
	Mar. 12, 1932	Mar. 14, 1931	Mar. 19, 1932	Mar. 21, 1931	Mar. 26, 1932	Mar. 28, 1931	Apr. 2, 1932	Apr. 4, 1931	Apr. 9, 1932	Apr. 11, 1931
98 cities.....	59	65	62	65	52	78	47	53	51	65
New England.....	63	79	65	67	65	70	38	46	62	84
Middle Atlantic.....	66	67	54	64	66	63	44	48	53	89
East North Central.....	54	72	48	72	31	82	29	64	46	86
West North Central.....	74	63	96	73	65	163	78	42	27	63
South Atlantic.....	59	53	49	73	60	61	37	47	37	49
East South Central.....	46	35	12	23	6	76	6	29	40	18
West South Central.....	135	68	162	71	112	64	158	86	92	54
Mountain.....	26	26	43	17	9	87	17	44	52	35
Pacific.....	44	55	89	51	70	69	57	53	70	87

MEASLES CASE RATES

98 cities.....	171	947	732	1,041	727	1,208	846	1,122	860	1,337
New England.....	901	1,346	860	1,527	599	1,479	777	1,106	997	1,509
Middle Atlantic.....	644	1,026	578	1,158	598	1,321	621	1,250	560	1,422
East North Central.....	936	582	1,167	558	1,203	722	1,573	726	1,688	830
West North Central.....	165	575	316	43	186	651	396	532	388	704
South Atlantic.....	286	2,758	302	3,448	232	3,885	245	3,814	343	4,554
East South Central.....	68	1,157	23	1,004	19	1,650	6	1,515	23	1,768
West South Central.....	99	37	40	51	158	47	206	88	49	68
Mountain.....	509	1,462	388	1,288	603	1,140	664	661	1,008	844
Pacific.....	1,205	357	1,443	394	1,449	519	1,262	359	1,312	500

SCARLET FEVER CASE RATES

98 cities.....	481	375	488	389	478	403	413	371	423	362
New England.....	209	589	724	676	731	697	683	577	774	474
Middle Atlantic.....	799	389	786	392	755	454	632	464	625	413
East North Central.....	382	399	394	395	397	378	345	377	360	337
West North Central.....	178	518	195	589	197	580	205	685	226	538
South Atlantic.....	327	311	371	342	382	311	345	291	318	356
East South Central.....	81	482	110	487	100	564	92	399	87	470
West South Central.....	79	95	89	102	49	78	46	95	53	105
Mountain.....	172	400	215	305	233	209	129	157	250	174
Pacific.....	135	96	147	110	133	104	122	92	145	104

See footnotes at end of table.

Summary of weekly reports from cities, March 6 to April 9, 1932—Annual rates per 100,000 population, compared with rates for the corresponding period of 1931—Continued

SMALLPOX CASE RATES

	Week ended—									
	Mar. 12, 1932	Mar. 14, 1931	Mar. 19, 1932	Mar. 21, 1931	Mar. 26, 1932	Mar. 28, 1931	Apr. 2, 1932	Apr. 4, 1931	Apr. 9, 1932	Apr. 11, 1931
98 cities.....	5	19	5	22	14	17	4	14	6	19
New England.....	0	0	0	0	0	0	2	0	0	0
Middle Atlantic.....	0	0	0	0	0	0	0	0	0	1
East North Central.....	5	9	4	8	2	7	4	9	4	6
West North Central.....	11	132	17	130	17	99	2	78	9	96
South Atlantic.....	0	0	0	0	10	4	0	2	8	18
East South Central.....	46	0	12	12	138	12	35	12	52	0
West South Central.....	0	61	13	95	0	78	3	71	10	81
Mountain.....	17	17	17	9	0	44	26	0	9	17
Pacific.....	13	41	11	43	15	22	13	16	23	53

TYPHOID FEVER CASE RATES

	5	3	4	4	15	4	5	4	3	5
98 cities.....	5	3	4	4	15	4	5	4	3	5
New England.....	0	0	2	2	5	2	0	2	2	2
Middle Atlantic.....	3	2	1	2	3	2	3	3	1	5
East North Central.....	1	2	2	2	3	2	4	2	2	3
West North Central.....	2	0	2	8	4	2	2	4	0	0
South Atlantic.....	25	6	2	16	12	12	8	14	16	16
East South Central.....	6	18	29	0	19	0	6	0	23	6
West South Central.....	10	14	23	10	20	7	13	10	0	3
Mountain.....	9	0	17	0	9	0	0	9	0	0
Pacific.....	8	4	2	8	6	10	17	2	6	8

INFLUENZA DEATH RATES

	37	34	37	32	136	29	29	23	25	18
91 cities.....	37	34	37	32	136	29	29	23	25	18
New England.....	19	36	10	19	17	14	17	2	5	19
Middle Atlantic.....	47	23	39	23	36	20	34	17	23	12
East North Central.....	39	28	40	28	41	25	24	18	22	14
West North Central.....	15	50	32	47	23	35	17	12	23	15
South Atlantic.....	39	57	49	49	36	32	39	40	61	30
East South Central.....	25	102	50	115	44	127	56	127	75	79
West South Central.....	37	55	61	35	84	55	40	69	40	45
Mountain.....	26	35	43	35	43	61	69	26	34	17
Pacific.....	7	36	12	34	5	41	2	14	0	19

PNEUMONIA DEATH RATES

	193	191	188	184	193	180	167	171	151	155
91 cities.....	193	191	188	184	193	180	167	171	151	155
New England.....	194	147	156	183	225	156	165	127	192	173
Middle Atlantic.....	250	214	238	216	243	220	203	223	186	165
East North Central.....	131	139	133	132	119	125	113	120	79	118
West North Central.....	215	159	192	215	239	178	204	150	189	233
South Atlantic.....	224	332	233	269	272	263	235	222	204	200
East South Central.....	182	242	201	210	201	191	194	172	201	178
West South Central.....	148	211	205	180	199	211	172	238	205	169
Mountain.....	207	235	233	122	138	131	121	157	129	191
Pacific.....	118	125	93	101	72	98	88	53	72	60

¹ The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1932 and 1931, respectively.

² Columbia, S. C., and Montgomery, Ala., not included.

³ Columbia, S. C., not included.

⁴ Montgomery, Ala., not included.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Week ended April 2, 1932.—The Department of Pensions and National Health of Canada reports cases of certain communicable diseases for the week ended April 2, 1932, as follows:

Province	Cerebro-spinal fever	Influenza	Poliomyelitis	Small-pox	Typhoid fever
Prince Edward Island ¹					
Nova Scotia		54			
New Brunswick					4
Quebec		4	1		6
Ontario	2	375		3	1
Manitoba ¹					
Saskatchewan				1	
Alberta ¹					
British Columbia			1	1	2
Total	2	433	2	5	13

¹ No case of any disease included in the table was reported during the week.

Quebec Province—Communicable diseases—Week ended April 2, 1932.—The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the week ended April 2, 1932, as follows:

Disease	Cases	Disease	Cases
Chicken pox	74	Poliomyelitis	1
Diphtheria	26	Scarlet fever	84
Erysipelas	9	Tuberculosis, pulmonary	48
German measles	16	Tuberculosis, other forms	1
Influenza	4	Typhoid fever	6
Measles	268	Whooping cough	31

Yukon Territory—Influenza.—According to information dated April 12, 1932, newspaper dispatches reported a mild form of influenza at Dawson, Yukon Territory. Public schools were said to have been closed because of the prevalence of the disease, which was thought to have originated among the Indians.

CZECHOSLOVAKIA

Communicable diseases—February, 1932.—During the month of February, 1932, certain communicable diseases were reported in Czechoslovakia, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax.....	6	1	Paratyphoid fever.....	9	—
Cerebrospinal meningitis.....	7	—	Puerperal fever.....	60	39
Diphtheria.....	2, 179	131	Scarlet fever.....	1, 440	22
Dysentery.....	7	—	Trachoma.....	122	—
Malaria.....	1	—	Typhoid fever.....	288	43

MEXICO

Tampico — Communicable diseases — March, 1932.— During the month of March, 1932, certain communicable diseases were reported in Tampico, Mexico, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria.....	4	—	Malaria.....	487	17
Enteritis, various.....	53	56	Tuberculosis.....	39	37
Influenza.....	133	4	Whooping cough.....	18	1

PORTO RICO

San Juan—Communicable diseases—Four weeks ended March 26, 1932.—During the four weeks ended March 26, 1932, cases of certain communicable diseases were reported in San Juan, Porto Rico, as follows:

Disease	Cases	Disease	Cases
Chicken pox.....	4	Measles.....	32
Diphtheria.....	6	Mumps.....	3
Filaria.....	2	Ophthalmia neonatorum.....	1
Influenza.....	1	Tetanus, infantile.....	1
Malaria.....	40		

VIRGIN ISLANDS

Notifiable diseases—March, 1932.—During the month of March, 1932, cases of certain diseases were reported in the Virgin Islands as follows:

St. Thomas and St. John:	Cases	St. Croix—Continued:	Cases
Gonorrhea.....	1	Leprosy.....	2
Syphilis.....	3	Syphilis.....	3
St. Croix:		Tetanus.....	1
Chancroid.....	1	Tuberculosis.....	4
Chicken pox.....	3	Uncinariasis.....	3
Filaria.....	1	Whooping cough.....	3

YUGOSLAVIA

Communicable diseases—December, 1931.—During the month of December, 1931, certain communicable diseases were reported in Yugoslavia, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax.....	34	7	Paratyphoid fever.....	4	1
Cerebrospinal meningitis.....	5	2	Scarlet fever.....	648	77
Diphtheria and croup.....	1,083	193	Sepsis.....	8	6
Dysentery.....	26	6	Tetanus.....	11	3
Erysipelas.....	217	18	Typhoid fever.....	295	52
Leprosy.....	1	---	Typhus fever.....	14	1
Measles.....	723	16			

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

CHOLERA—Continued

[C indicates cases; D, deaths; P, present]

Place	Sep-tem-ber, 1931	Octo-ber, 1931	No-vem-ber, 1931	December, 1931			January, 1932			February, 1932			March, 1932	
				1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20	21-29	1-10	11-20
Indo-China (French) (see also table above):														
Annam ¹										4				
Cambodia ¹	14	19	4	2	1	1	1	9	2	4	2		6	1
Cochin-China ¹	7	18		1	1	1	2	2	2	3	2		3	1
	18	14	6	3	3	3	2	1	2	7	2	P	3	2
	13	13	4	2			1	1	2	5			2	1

¹ Reports incomplete.

PLAGUE

Place	Week ended—													
	January, 1932				February, 1932				March, 1932				Apr. 2, 1932	
	16	23	30	6	13	20	27	5	12	19	26			
Argentina: Cordoba Province ¹														
Azores:														
San Miguel Island.....				1										
Tercera Island.....														
Belgian Congo.....														
British East Africa (see also table below):														
Tanganyika.....														
Uganda.....	13	5												
Canary Islands: Palma Island—Los Lanos.....	276	218	211	145	63	14	7	6	5	1				
	270	211	138	138	62	14	6	6	5	1				
						8	3							
						5								

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE—Continued

(C indicates cases; D, deaths; P, present)

Place	Sept. 20- 17, 1931	Oct. 19- 14, 1931	Nov. 15- 12, 1931	Dec. 13- 9, 1932	Week ended—											
					January, 1932			February, 1932				March, 1932				Apr. 2, 1932
					16	23	30	6	13	20	27	5	12	19	26	
India	2,550	2,493	4,285	6,898	1,731	2,122	1,856	2,083	2,293	2,033						
Bassett	1,147	1,170	1,739	2,912	840	1,047	1,005	1,079	1,843	1,250						
Bombay	1	1	1	1												
Plague-infected rats	42	22	56	42	8	18	14	17	21	27						
Madras Presidency	185	91	169	57	87	99	87	22	66	10						
Moulmein	108	40	24	50	58	44	35	14	42	5						
Rangoon	2															
Plague-infected rats	5	1	1	1	1	2	2	1	4	3						
	1	1	1	1	1	1	1	1	1	1						
	4	1	2	1												
Indo-China (see table below).																
Iraq																
Baghdad		2	7	2	2	1	1	1	1	1						
Mandhan			2													
Madagascar (see also table below): Tamatave		3	2													
Morocco		1	1													
Peru (see table below).	1	2	11	1												
Senegal (see table below).	18	6														
Siam	4	5	5	1	1	1										
Spain: Hospitalet—Barcelona Province	3	2	2	1	1											
Syria: Beirut	2	7														
Tunisia: Tunis	1	1														
Union of South Africa: Orange Free State	3	1														
	P	P	P	P	P	P	P	2								

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

SMALLPOX

[C indicates cases; D, deaths; P, present]

Place	Week ended—													
	January, 1932				February, 1932				March, 1932				April, 1932	
	16	23	30	6	13	20	27	5	12	19	26	2	9	
Aden.....														
Algeria.....														
Algiers.....			1											
Southern Territories.....					2					1				
Brazil:														
Porto Alegre (alastrim).....														
Rio de Janeiro.....		7	4	17	6	12								
Santos.....		2												
British East Africa: Tanganyika.....	1, 184	18	2	8	12	4								
	97	2	4	5	2	1								
British South Africa:														
Northern Rhodesia.....	1		5											
Southern Rhodesia.....														
Canada:														
Alberta.....														
British Columbia 1.....	12	6	3											
Manitoba.....		2	2	8	8	10	4	3	7	2	1			
Nova Scotia.....				5	5									
Ontario.....	17	15	11	14	1	4	16	1	1	1				3
North Bay.....				3	2									
Ottawa.....				1										
Quebec.....	8	12												
Saskatchewan.....														
Regina.....	11	33	34	11	7	23		8	7	5		1		
Chile:														
Santiago.....	2													
Tocopilla.....														
China:														
Amoy.....	2	8	46	218	54	32	35	34	22	15	12	8	10	
Canton.....	1	6	36	79	20	11	14	12	7	5	17	3	10	
		2	14	18	8	6	5	5	16	21	15	29	11	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place	Sept. 20- Oct. 17, 1931	Oct. 18- Nov. 14, 1931	Nov. 15- Dec. 12, 1931	Dec. 13, 1931- Jan. 9, 1932	Week ended—												
					January, 1932			February, 1932			March, 1932			April, 1932			
					16	23	30	6	13	20	27	5	12	19	26	2	9
India—Continued.																	
Nagapatam.....	C	2	1	1	1												
Rangoon.....	D	3	3	9	39	15	35	68	39	141							
Tuticorin.....	D	2	1	7	10	7	8	15	10	18	45	29	61	37	50	31	
Viragapatam.....	D	4	5	8	6		19	9	9	5	15	7	9	4			
	D	1	1				2		2	2	1	1	5	4			
	D	6	6		2												
	D	1															
India (French):																	
Karikal.....	C	8	4	7	4												
	D	4	3	7	2												
Pondicherry Territory.....	D	23	38	26	22		11	4	13	8	4	4	4	11	10	1	7
	D	21	36	25	22		4	6	4	13	8	4	4	7	10	4	5
Indo-China (see also table below):																	
Pnompenh.....	C						1			2							
Saigon and Cholon.....	D	6	7	26	32	23	28	43	23	38	46	33	28	54	45	71	42
	D	3	5	12	18	24	22	35	17	24	23	23	15	48	35	60	31
Iraq:																	
Baghdad.....	D						11	15	5	2	1	1	1	1	1	12	6
	D						8	9	2	2	2	1	1	1	1	5	4
Basra.....	D						1	1	1	1	1	1	1	1	1	4	7
	D						2	2									
Mosul Liwa.....	D	5															
Ivory Coast (see table below).																	
Jamaica.....	C			1													
Japan:																	
Kobe.....	C																
	D																
Taiwan.....	D																
Yokohama.....	C																
Mexico (see also table below).																	
Chihuahua.....	D																
Jalisco (State)—Guadalajara.....	D	4	2	1	1	2				1	1	1	1	1	1	1	1
Mexico City and surrounding territory.....	D	7	5	10	8	3	6	5	7	9	11	6					
	D	4	1														

Monterrey.
San Luis Potosi.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; F, present]

Place	Sep-tem-ber, 1931	Octo-ber, 1931	No-vem-ber, 1931	De-cem-ber, 1931	Jan-uary, 1932	Febru-ary, 1932	Place		Sep-tem-ber, 1931	Octo-ber, 1931	No-vem-ber, 1931	De-cem-ber, 1931	Jan-uary, 1932	Febru-ary, 1932
Chosen.....	C	9	7	2	1	6	Mexico (see also table above)	D	565	427	152	279	488	368
France.....	D	1	1	6	1	3		C	59	91	152	279	488	368
Guatemala.....	C	4						D					31	22
							Turkey (see also table above)						1	1
Place	December, 1931			January, 1932			February, 1932			March, 1932				
	1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20
Indo-China (see also table above).....														
Ivory Coast.....														
Syria: Beirut.....														

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPHUS FEVER—Continued

[C indicates cases; D, deaths; P, present]

Place	Week ended—											
	September, 1931			October, 1931			November, 1931			January, 1932		
	Sept. 17, 1931	Sept. 20-27, 1931	Sept. 28-Oct. 4, 1931	Oct. 11-18, 1931	Oct. 19-26, 1931	Oct. 27-Nov. 3, 1931	Nov. 4-11, 1931	Nov. 12-19, 1931	Nov. 20-27, 1931	Dec. 28-Jan. 4, 1932	Jan. 5-12, 1932	Jan. 13-20, 1932
Mexico:												
Guadalupe												
Mexico City, including municipalities in Federal District												
San Luis Potosi												
Torreón												
Morocco												
Palestine												
Paraguay: Asunción												
Peru												
Poland												
Portugal: Oporto												
Rumania												
Tunisia: Tunis												
Turkey (see table below)												
Union of South Africa												
Cape Province												
Municipality of East London												
Natal												
Orange Free State												
Transvaal												
Venezuela: Caracas (see table below)												
Yugoslavia (see table below)												
On vessel: At Antioquia, from Iquique and points north												

¹ Typhus fever was reported in Peru from May to November, 1931, 153 new cases being reported during the months of October and November. The disease did not spread to the coastal regions.

April 29, 1932

Place	Sep-tem-ber, 1931	Octo-ber, 1931	No-ven-ber, 1931	De-cem-ber, 1931	Janu-ary, 1932	Feb-ruary, 1932	Place	Sep-tem-ber, 1931	Octo-ber, 1931	No-ven-ber, 1931	De-cem-ber, 1931	Janu-ary, 1932	Feb-ruary, 1932
Chosen: Seoul	12	24	4			5	Lithuania		5	9			10
Czechoslovakia		18	1			1	Turkey	16	11	14	21	14	3
Greece	9	12	4	10	1		Venezuela: Caracas				2	3	5
Latvia	1			2	4	4	Yugoslavia				1	2	26
				1								11	2

CHOPERT: SINGLE ENTRIES OF LITHUANIA, TURKEY AND VENEZUELA

April 20, 1922

[illegible]

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